Original Research Article

A study of management of tinea infections at a tertiary health care center

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Abstract

Background: Tinea infections are most commonly observed skin fungal infections. Prevalence of tinea infection is increasing world-wide with increased drug resistance. Various antifungal drugs are used in the treatment of tinea infections. **Aim and objective:** to study treatment of tinea infections at a tertiary care center **Methodology:** All enrolled patients confirmed with clinical and microbiological diagnosis. Treatment included both oral and topical Terbinafine treatment along with Itraconazole. Terbinafine 1% cream twice a day and 250 mg tablet once daily for upto 4-6 weeks. In severe cases and patients with relapsed infection were treated with Itraconazole 100 mg/day for upto 4-6 weeks along with Terbinafine. Patients were followed up for prognosis. Clinical cure and mycological cure was analysed. **Results and discussion:** Mean age of the patients was 37.12±2.3 years. Majority of the patients were in the age group of 18-30 years (35%) followed by 31-40 years (28%). Male to female ratio was 0.6:1. 60% patients were having moderate infection. Tinea corporis was most common infection (38%) followed by tinea cruris (35%). In present study 72% patients reported 100% cure and 28% patients showed cure with combination of terbinafine and itraconazole.
Key Word: tinea infections.

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INTRODUCTION

Dermatophytes are the most common agents of superficial fungal infections worldwide. Prevalence of these infections is mora commonly seen in developing countries, especially in the tropical and subtropical countries like India, due to high temperature and humidity[1] Various studies on epidemiology of dermatophytic infection in India have shown a rising trend in the prevalence of cutaneous dermatophytosis with different pattern and drug resistance.[2-5] Inea infectinos are classified according to site of involvement such as tinea capitis (head), tinea faciei (face), tinea barbae (beard), tinea corporis (body), tinea manus (hand), tinea cruris (groin), tinea pedis (foot), and tinea unguium (nail). Tinea infections present with redness and swelling at infection site. Most commonly seen complaints are itching, scaling, crusting. Movement of the organism away from the infection site produces the classical ringed lesions.[6] Dermatophytes spread indirectly from fomites (hair brushes, towel and hat) and by direct contact from other people, animals and soil.[7] Systemic antifungals are used in treatment of fungal infections. Three major groups of antifungal agents in clinical use are azoles, polyenes and allylamine/thiocarbamates. Unlike the azole, terbinafine has a fungicidal mode of action. They inhibit the enzyme squalene epoxidase, leading to a fungicidal accumulation of squalene within the fungal cell. Topical therapy is commonly used. The oral therapy is usually reserved for more severe infections and will lead to better mycological clearance. This study was conducted to see the management of tinea infections at a tertiary health care center.

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METHODOLOGY

Present study is a prospective study carried out in 100 patients presenting with tinea infections. Patients clinically diagnosed with tinea infections to dermatology OPD of a tertiary health care center were enrolled in the study.

Inclusion Criteria

- Patients diagnosed with tinea infections
- Patients above 18 years

Exclusion Criteria

- Patients below 18 years
- Patients not willing to participate in the study.Study was approved by ethical committee. A written valid consent was taken from patients after explaining study to them.

All patients with clinically diagnosed tinea infections undergone microbiological investigations. Skin scrapings of these patients were examined under KOH mount. specimens were inoculated into Sabouraud's agar plates. After confirmation of fungal hyphae and spores under microscope patients were treated. Treatment included both oral and topical Terbinafine treatment along with Itraconazole. Terbinafine 1% cream twice a day and 250 mg tablet once daily in the evening after a meal for upto 4-6 weeks or according to the improvement of infection. In severe cases and patients with relapsed infection also advised to take Itraconazole 100 mg/day after meal for upto 4-6 weeks along with Terbinafine. Patients were adviced not to apply any other creams, lotions, or ointments to their lesions during the course of the study. Treatment continued till 5 weeks. First follow visit done after 2 weeks. Second visit at 4weeks and after 5 weeks last follow up done. Clinical signs and symptoms like erythema, scaling, vesiculation, pruritis, pustules, exudation and crusting-was recorded at baseline. They were scored on a 4 point scale 0 absent; 1 mild; 2 moderate; 3 severe. Clinical response was categorized as either effective or ineffective treatment. Effective treatment was defined as negative microscopy and culture with mild or no residual erythema and/or scaling and/or pruritis and no other clinical signs. Treatment outcomes that did not meet these definitions were classified as ineffective. The criterion for mycological cure was that samples should be negative by both microscopy and culture. The subjective clinical criteria were considered improvements in the appearance of the cutaneous skin with a marked reduction in the signs and symptoms of infection. Cure was evaluated by clinical cure (≥85% skin clearing), mycologic cure (negative microscopy of KOH samples and negative culture) and complete cure at follow up (mycologic cure and complete skin clearing). Adverse reactions during the treatment were recorded. Data was analysed with appropriate statistical tests.

RESULTS

Total 100 patients were studied. Mean age of the patients was 37.12±2.3 years. 40 patients were male and 60 were females. Itching (100), Erythema (30%) and pruritis(28%) were most common complaints. Other complaints were scaling (8%), exudation (18%) and crusting (15%). Table 1 shows distribution of patients according to age and sex. Majority of the patients were in the age group of 18-30 years (35%) followed by 31-40 years (28%). Age group of 51-60 had 15% of the patients. Male to female ratio was 0.6:1. According to fig 1 60% of the patients were having moderate infections. Mild and severe infections were found in 28% and 12% respectively. Table 2 shows distribution of patients according to type of infection. Tinea corporis was most common infection (38%) followed by tinea cruris (35%). Other infection found were tinea capitis (8%), tinea pedis (12%) and tinea manum (7%). In present study 72% patients reported 100% cure and 28% patients had slight improvement during first 2 weeks. Those patients with slight improvement were given combination therapy of both terbinafine (250 mg/day for 2–4 weeks) and itraconazole (100 mg/day for 2–4 weeks. Following this it was observed that all patients responded well. For these patients last follow up was at 6 weeks. No sex difference was observed in cure of these patients. out of 100 patients 18% individuals noted with relapse of infection.

Table1: Distribution of patients according to age and sex

Sr. no	Age group	Males	Females	Total
1	18-30	14	21	35
2	31-40	10	18	28
3	41-50	10	12	22
4	51-60	06	09	15
5	Total	40	60	100

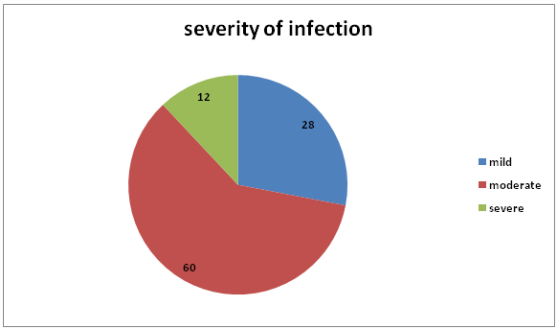

Figure 1: Distribution of patients according to severity of infection

Table 2: Distribution of patients according to type of infection

Sr no	Type of infection	No of patients	Percentage
1	Tinea capitis	08	8%
2	Tinea corporis	38	38%
3	Tinea cruris	35	35%
4	Tinea pedis	12	12%
5	Tinea mannum	07	7%

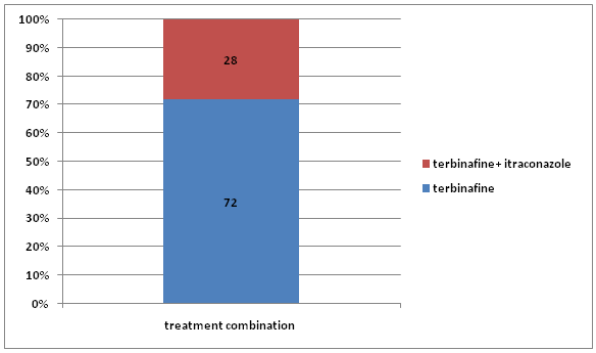

Figure 2: Distribution of patients according to treatment combination they received

DISCUSSION

Total 100 patients were studied. Mean age of the patients was 37.12±2.3 years. Similar findings were seen in Dabas *et al*[8] where they observed mean age of 31 years. 40 patients were male and 60 were females. Similar findings were observed in Krishnendu Das *et al.*[9] where slight female preponderance was seen. contrary to our study Dabas *et al*. found high prevalence among males (64%) Majority of the patients were in the age group of 18-30 years (35%) followed by 31-40 years (28%). This could be because of occupation associated with water and chemicals. Housewives also more exposed to water during household work. Younger population is more exposed to risk factors like work associated with water, chemicals and more sweating as cpmpared to older population. In our study, Tinea corporis was most common infection (38%) followed by tinea cruris (35%). Similar results were seen in kar *et al*[10] and Belurkar *et al*[11] where they found that tinea corporis was most common infection among all fungal infections. In a study conducted in India tinea corporis (35.4%) was the predominant clinical condition followed by tinea cruris (16.8%) and tinea capitis (16.7%).[12] In present study 72% patients reported 100% cure and 28% patients had slight improvement during first 2 weeks. Those patients with slight improvement were given combination therapy of both terbinafine and itraconazole. No sex difference was observed in cure of these patients. Similar studies were carried out previously such as Lachapelle *et al.*[13] who conducted comparative trial between itraconazole 100 mg/day and ultramicronized griseofulvin 500 mg/day for *Tinea corporis* or *Tinea cruris*, which showed significantly better mycological cure and clinical outcome as compared to monotherapy with itraconazole after 2 weeks. Another study by Gupta AK *et al*[14] was carried out for comparing terbinafine with griseofulvin (both 500 mg daily for 6 weeks) for *Tinea corporis* and reported about 87% mycological cure rate with terbinafine and 73% with griseofulvin . In a study by Panagiotidou D *et al*[15] comparison was done between griseofulvin (500mg/day) and itraconazole (100 mg/day) reported that itraconazole is better for treatment of *Tinea* infections Bell-Syer *et al.* [16] reported that topical therapy is less effective than oral antifungals for the treatment of *Tinea pedis*, and oral treatment is generally given for 4–8 weeks. The efficacy of oral terbinafine and itraconazole were found to be similar as compared to griseofulvin. In our study Out of 100 patients 18% individuals noted with relapse of infection. Causes of relapse may be due to poor adherence to treatment and development of drug resistance. Similar findings were observed by Moriarty *et al.*[17]

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