

Recurrent tinea corporis and cruris: Antifungal resistance or poor compliance?

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Dermatophytes are fungi that invade keratinized tissues (skin, hair and nails).¹ Three main genera of dermatophytes cause infection; *Trichophyton*, *Epidermophyton* and *Microsporum*. They can be either anthropophilic, zoophilic and geophilic. Clinically these can be classified according to anatomical site of involvement. Morphological variants include tinea imbricata, pseudoimbricata and Majocchi granuloma.

The prevalence of cutaneous fungal infections is 20-25% worldwide of which dermatophytes are the most common causative factor.² Prevalence of fungal infections in various provinces of Pakistan varies from 11.6 to 34.8 percent.³ Yet this is increasing all over the world due to certain host and pathogen factors.

Fungal infections are diagnosed clinically in majority of cases and antifungal medicines are prescribed without laboratory confirmation of diagnosis and drug sensitivity screen. Moreover fungal infections take longer duration of treatment as compared to other infections hence patients either take medicine for shorter periods of time or irregularly making antifungal resistance more likely.

Chronic dermatophytosis is persistent infection

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that runs a chronic course with episodes of remissions and exacerbations. There is no standard definition regarding duration of chronicity.

The treatment for superficial fungal infections is either topical, oral or combination antifungal therapy. Various factors identified to result in failure to cure include poor adherence to treatment, incomplete treatment duration, involvement of multiple family members causing reinfection, immunosuppression, extensive use of antibacterial and antiseptic skin products, raised environmental temperature causing excessive sweating like in housewives and labourers and pharmacologic factors.⁴

Topical antifungals include whitfield ointment, castellani solution, azoles (clotrimazole, ketoconazole) and terbinafine. Treatment duration varies according to site of involvement. 4 weeks for tinea corporis and cruris. Topical therapy is usually less effective than oral antifungals. Rotta *et al.* evaluated efficacy of 14 different topical antifungals and difference in mycological cure rate at the end of treatment was not significant.⁵

Commonly used oral antifungal medicines include terbinafine, itraconazole, fluconazole and griseofulvin. Systemic therapy is indicated for extensive disease, patients who fail to respond to topical medicine and for chronic and recurrent dermatophytosis. Efficacy of terbinafine and itraconazole are comparable but

fluconazole and griseofulvin require longer duration of treatment as compared to former.^{6,7}

There is no comparative study on combination of topical and systemic versus monotherapy with systemic antifungal drugs. Combination therapy is expected to have better mycologic cure rate than systemic and topical alone. Ideally combination should be from different groups for wide coverage so that emergence of resistant strains can be prevented. Moreover, drugs given in higher dose for shorter periods are less likely to cause resistance than a smaller dose given for longer duration of time.

There should be search for newer antifungal molecules and special carrier system to enhance bioavailability of parent drug into the skin, to counteract recurrent infection. Such topical formulations are composed of liposomal microemulsions or micellar solutions which have better penetration through epidermis. Macrocarpal C is derived from leaves of *Eucalyptus globulus Labill* which has antifungal activity against certain dermatophytes.⁸

Treatment of dermatophytosis has increasingly become difficult and challenging. One has to think beyond conventional treatment protocols to control recurrence. The guidelines by American Academy of Dermatology were devised almost 2 decades back.⁹ More recent guidelines, published by British Association of Dermatology, are largely focused on tinea capitis and onychomycosis. Few review articles are available on use of topical antifungals and still fewer on systemic therapies. Randomized controlled trials are required to formulate evidence based recommendations at national and international level regarding dose and duration of oral antifungal treatment.

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