What is the most effective treatment for tinea pedis (athlete's foot)?

EVIDENCE-BASED ANSWER

Topical therapy is effective for tinea pedis. Topical terbinafine has a 70% cure rate, is available over the counter (OTC), and requires only 1 to 2 weeks of therapy. Two other OTC topicals, tolnaftate and miconazole, require 2 to 4 weeks to achieve slightly lower cure rates, but are considerably less expensive. (Grade of recommendation: A)

The most effective treatment for tinea pedis is oral terbinafine 250 mg twice a day for 2 weeks (94% clinical cure rate). However, oral terbinafine is expensive and not approved for this indication. Oral therapy may be required for patients with hyperkerototic soles, severe disease, topical therapy failure, chronic infection or immunosuppression. (Grade of recommendation: B, based on small randomized controlled trials [RCTs] with limited head-to head comparisons of drugs)

EVIDENCE SUMMARY

The Cochrane Database of Systemic Reviews[1,2] reported 72 placebo-controlled trials of topical agents that yielded the following cure rates: undecenoic acid, 72%; allylamines (terbinafine, naftifine, butenafine), 70%; tolnaftate, 64%; azoles (miconazole, clotrimazole, ketoconazole, econazole, oxiconazole), 47%. A meta-analysis of 11 RCTs suggests that allylamines are slightly more effective than azoles.

Orally administered antifungal agents are expensive and can have systemic side effects. Griseofulvin and ketoconazole are approved for oral therapy, but product labels clearly state that they should be used only after topical agents have failed. Griseofulvin has been used for more than 30 years, is well tolerated, and efficacious in treating dermatomycoses in the range of 60%.[3] Ketoconazole's cure rate is similar, but its use in cutaneous infections is limited by multiple drug interactions and serious side effects. Three placebo-controlled RCTs of itraconazole of varying doses and duration of treatment suggested favorable clinical cure of moccasin-type tinea pedis (51%-85%) . The most effective itraconazole regimen was 200 mg twice daily for 1 week. In a large double-blind multicenter study of all forms of tinea pedis, De Keyser et al[4] compared 2 weeks of terbinafine at 250 mg/day to 2 weeks of itraconazole at 100 mg/day. After 8 weeks they found terbinafine superior to itraconazole for clinical cure (94.1% vs 72.4%). In a single multicenter open study the cure rate for fluconazole 150 mg was 77% when used once weekly for 3 weeks. See Table 1 for summary.

RECOMMENDATIONS FROM OTHERS

American Academy of Dermatology Guidelines[5] recommend topical therapy for initial treatment of tinea pedis. Oral therapy may be required to treat patients with hyperkeratotic soles, disabling or extensive disease, topical therapy failure, chronic infection, or immunosuppression. Surgical therapy is not indicated.

Tsveti Markova, MD
Wayne State University
Expert literature search by E. Diane Johnson, MLS

TABLE

RECOMMENDED TOPICAL TREATMENTS FOR TINEA PEDIS

Drug	Cure Rates, %	Form	Frequency and duration of treatment*	Comments
Miconazole (Micatin)	47	2% lotion, spray, cream, powder	BID for 2-4 weeks	Inexpensive, OTC
Terbinafine (Lamisil)	70	1% cream, solution, spray	BID for 1-2 weeks	Shorter length of treatment, OTC
Naftifine (Naftin)	70	1% gel, cream	QD for 2-4 weeks	Once a day, Rx
Butenafine (Mentax)	70	1% cream	QD for 4 weeks	Once a day, Rx
Tolnaftate (Tinactin, Altate)	64	1% powder, spray, cream	BID for 2-4 weeks	Inexpensive, OTC

Rx denotes prescription; OTC, over the counter; BID, twice a day; QD, every day.
*Frequency and duration of treatment varies according to the type of tinea pedis.

REFERENCES

1. Crawford F, Hart R, Bel-Syer S, Togerson D, Young P, Russell I. Cochrane Review. In: The Cochrane Library, Issue 3, 2001. Oxford: Update Software.
2. Hart R, Sally E, Bell-Syer S, Crawford F, Togerson D, Young P, Russell I. BMJ 1999; 319:79-82.
3. Pierard G, Arrese J, Pierrard-Franchimont C. Drugs 1996; 52:209.
4. De Keyser P, De Backer M, Massart DL, Westelnick KJ. Br J Dermatol 1994; 130:22-5.
5. Drake LA, Dinehart SM, Farmer ER, et al. J Am Acad Dermatol 1996; 34:282-6.