

Prior Authorization DRUG Guidelines

**LAMISIL (terbinafine hydrochloride tablets): ANTI-FUNGAL**

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**Description**

Terbinafine tablet is an allylamine antifungal agent indicated for the treatment of onychomycosis of the toenail or fingernail caused by dermatophytes (tinea unguium).<sup>1, 67</sup> Other uses of terbinafine tablets besides onychomycosis are discussed in this policy. This policy does not include terbinafine oral granules, which are indicated for the treatment of tinea capitis in children aged 4 years and older.<sup>64</sup> For more information on the safety and efficacy of terbinafine in the treatment of onychomycosis, please refer to the *Antifungal Therapy for Onychomycosis Therapeutic Guideline*.

**Recommended Authorization Criteria**

Coverage of terbinafine tablets are recommended for those who meet one of the following criteria:

**FDA-Approved Indications**

1. **Onychomycosis (refer to the *Antifungal Therapy for Onychomycosis Therapeutic Guideline* for the criteria).** Terbinafine is FDA-approved for the treatment of onychomycosis of the toenail or fingernail due to dermatophytes (tinea unguium).<sup>1,67</sup>

**Other Uses with Supportive Evidence**

2. **Tinea corporis.** Approve after a trial of a topical antifungal agent, except for extensive conditions. Terbinafine has been useful for this condition,<sup>2-5</sup> however, many topical antifungal agents are equally effective and are indicated for tinea corporis.<sup>12-14</sup> However, for extensive conditions, oral antifungal agents may be needed or preferred for practical reasons.
3. **Tinea cruris, faciei, manuum, pedis, and imbricate.** Approve after a trial of a topical antifungal agent. Terbinafine has been useful for these various tinea conditions;<sup>2-3,5-11,15-16</sup> however, many topical antifungal agents are similarly effective and some are indicated for these conditions.<sup>12-14,17</sup>

4. **Plantar- or moccasin-type dry tinea pedis.** Approve. Oral antifungal therapy is often required for plantar or moccasin-type tinea pedis as topical antifungal agents have led to poor responses or frequent relapses. Studies with terbinafine have shown good results in the treatment of plantar/moccasin-type tinea pedis.<sup>10,18-22</sup>
5. **Black piedra.** Approve. Case reports document that terbinafine has been useful in black piedra, a condition with limited pharmacologic options.<sup>23-25</sup>
6. **Tinea capitis.** Approve. Terbinafine tablets have been effective in the treatment of tinea capitis,<sup>29-40</sup>
7. **Tinea barbae.** Approve. Case reports have described terbinafine as useful in tinea barbae.<sup>42-43</sup>
8. **Cutaneous (skin) candidiasis.** Approve after a trial of a topical antifungal agent and an oral azole antifungal (eg, ketoconazole, fluconazole, or itraconazole). Terbinafine led to a mycological cure rate of 82% of patients with skin candidiasis in a 4-week randomized, double-blind, multicenter study involving 118 patients.<sup>44</sup> Topical antifungal agents and other azole antifungals are also effective for this condition.
9. **Other superficial fungal skin infections.** Approve after a trial of a topical antifungal agent or an oral antifungal agent (eg, itraconazole, fluconazole). Terbinafine has been used in various superficial fungal infections (eg, seborrheic dermatitis,<sup>45</sup> cutaneous leishmaniasis,<sup>46-47</sup> cutaneous alternariosis,<sup>48</sup> and other subcutaneous infections<sup>49</sup> and cutaneous sporotrichosis<sup>50-51,65</sup>, chromoblastomycosis<sup>66</sup>). Other antifungal agents and topical antifungal agents have been reported to be efficacious in some of these conditions, such as seborrheic dermatitis.<sup>52</sup>
10. **Eumycetoma/mycetoma.** Approve. In a single-center, open-label study<sup>61</sup> 27 patients with eumycetoma received terbinafine 500 mg BID for 24-48 weeks. An improvement or cure was noted in approximately 80% of patients. This subcutaneous mycoses is difficult to treat and usually involves surgical intervention.

## Exclusions

Coverage of terbinafine tablets is *not* recommended in the following circumstances:

1. **Tinea versicolor (pityriasis versicolor).** Oral terbinafine is not recommended for the treatment of tinea versicolor.<sup>53-54</sup> Although topical terbinafine is effective for tinea versicolor, oral treatment is not effective.
2. **Systemic fungal infections.** Data for terbinafine is confined to case serious or case reports such as compassionate cases of bronchopulmonary *aspergillosis*<sup>55</sup>, relapsing *aspergillus* bronchitis<sup>56</sup> and *Curvularia lunata* endocarditis<sup>57</sup> and others<sup>58</sup>. Very little data exist on the use of terbinafine in the treatment of systemic fungal infections,

therefore, its use for these indications should be considered investigational at this time.

3. **Oral or esophageal candidiasis.** Oral terbinafine is not recommended for the treatment of oral or esophageal candidiasis. Limited data are available regarding the use of terbinafine for these infections.<sup>59-60</sup>
4. **Vaginal candidiasis.** Oral terbinafine is not recommended for the treatment of vaginal candidiasis. Limited data have studied its efficacy for this condition and the 2006 Centers for Disease Control and Prevention (CDC) Sexually Transmitted Diseases (STD) guidelines regarding vaginal candidiasis recommended azole antifungals (e.g., fluconazole) for this condition.<sup>62-63</sup>
5. Coverage is not recommended for circumstances not listed in *Recommended Authorization Criteria*.

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| <b>A. Onychomycosis</b><br><br>1. One of the following: <ul style="list-style-type: none"> <li><input type="checkbox"/> Member has diabetes <b>OR</b>,</li> <li><input type="checkbox"/> Member has an iatrogenically-induced or disease-associated immunosuppression, such as that due to AIDS, antirejection treatment for bone marrow or solid organ transplant, or chemotherapy for cancer <b>OR</b>,</li> <li><input type="checkbox"/> Member has a systemic dermatosis with impaired skin integrity (e.g., pemphigus, ichthyosis) <b>OR</b>,</li> <li><input type="checkbox"/> Member has a significant vascular compromise (peripheral)</li> </ul> | X       |
| For onychomycosis, new courses of therapy should not be initiated until 32 weeks following the end of therapy unless infection is noted in a previously unaffected nail (since cure rate continues to increase through the 11th month following initiation of a 12 week course of therapy).                                                                                                                                                                                                                                                                                                                                                               |         |

## References

1. Lamisil<sup>®</sup> tablets [package insert]. East Hanover, NJ: Novartis Pharmaceuticals Corporation; November 2005.
2. Farag A, Taha M, Halim S. One-week therapy with oral terbinafine in cases of tinea cruris/corporis. *Br J Dermatol*. 1994;131:684-686.
3. Voravutinon V. Oral treatment of tinea corporis and tinea cruris with terbinafine and griseofulvin: a randomized double blind comparative study. *J Med Assoc Thai*. 1993;76(7):388-393.
4. Cole GW, Stricklin G. A comparison of a new oral antifungal terbinafine with griseofulvin as therapy for tinea corporis. *Arch Dermatol*. 1989;125:1537-1539.
5. Del Palacio Hernanz A, Lopez Gomez S, Gonzalez Lastra F, et al. A comparative double-blind study of terbinafine (Lamisil<sup>®</sup>) and griseofulvin in tinea corporis and tinea cruris. *Clin Exp Dermatol*. 1990;15:210-216.
6. Budimulja U, Kuswadi D, Bramono S, et al. A double-blind, randomized, stratified controlled study of the treatment of tinea imbricata with oral terbinafine or itraconazole. *Br J Dermatol*. 1994;130:29-31.
7. Wingfield AB, Fernandez-Obregon AC, Wignall FS, Greer DL. Treatment of tinea imbricata: a randomized clinical trial using griseofulvin, terbinafine, itraconazole and fluconazole. *Br J Dermatol*. 2004;150:119-126.

8. Gupta AK, DeDoncker P, Degreef. Tinea manus treated with 1-week itraconazole vs. terbinafine. *Int J Dermatol.* 2000;39:529-531.
9. Tausch I, Decroix J, Gwiedzinski Z, et al. Short-term itraconazole versus terbinafine in the treatment of tinea pedis or manus. *Int J Dermatol.* 1998;37:140-142.
10. White JE, Perkins PJ, Evans EGV. Successful 2-week treatment with terbinafine (Lamisil) for moccasin tinea pedis and tinea manuum. *Br J Dermatol.* 1991;125:260-262.
11. Patel GK, Mills CM. Tinea faciei due to *Microsporum canis* abscess formation. *Clin Exp Dermatol.* 2000;25:608-610.
12. Gupta AK, Einarson TR, Summerbell RC, Shear NH. An overview of topical antifungal therapy in dermatomycoses. *Drugs.* 1998;55(5):645-674.
13. Gupta AK, Chaudhry M, Elewski B. Tinea corporis, tinea cruris, tinea nigra, and piedra. *Dermatol Clin.* 2003;21:395-400.
14. Kyle AA, Dahl MV. Topical therapy for fungal infections. *Am J Clin Dermatol.* 2004;5(6):443-451.
15. De Keyser P, Backer MDE, Massart DL, Westelinck KJ. Two-week oral treatment of tinea pedis, comparing terbinafine (250 mg/day) with itraconazole (100 mg/day): a double-blind, multicentre study. *Br J Dermatol.* 1994;130(Suppl 43):22-25.
16. Barnetson RS, Marley J, Bullen M, et al. Comparison of one week of oral terbinafine (250 mg/day) with four weeks of treatment with clotrimazole 1% cream in interdigital tinea pedis. *Br J Dermatol.* 1998;139:675-678.
17. Gupta AK, Chow M, Daniel CR, Aly R. Treatments of tinea pedis. *Dermatol Clin.* 2003;21:431-462.
18. Savin R. Successful treatment of chronic tinea pedis (moccasin type) with terbinafine. *Clin Exp Dermatol.* 1989;14:116-119.
19. Savin RC. Oral terbinafine versus griseofulvin in the treatment of moccasin-type tinea pedis. *J Am Acad Dermatol.* 1990;23:807-809.
20. Hay RJ, Logan R, Moore M, et al. A comparative study of terbinafine versus griseofulvin in "dry-type" dermatophyte infections. *J Am Acad Dermatol.* 1991;24:243-246.
21. Hay RJ, McGregor JM, Wuite J, et al. A comparison of 2 weeks of terbinafine 250 mg/day with 4 weeks of itraconazole 100 mg/day in plantar-type tinea pedis. *Br J Dermatol.* 1995;132:604-608.
22. Savin RC, Zaias N. Treatment of chronic moccasin-type tinea pedis with terbinafine: a double-blind, placebo-controlled trial. *J Am Acad Dermatol.* 1990;23:804-807.
23. Gip L. Terbinafine for black piedra. *Lancet.* 1993;341(8853):1164.
24. Gip L. Black piedra: the first case treated with terbinafine (Lamisil). *Br J Dermatol.* 1994;130 Suppl 43:26-28.
25. Drake LA, Dinehart SM, Farmer ER, et al. Guidelines of care for superficial mycotic infections of the skin: Piedra. *J Am Acad Dermatol.* 1996;34(2 Pt 1):122-124.
26. Chan YC, Friedlander SF. Therapeutic options in the treatment of tinea capitis. *Expert Opin Pharmacother.* 2004;5(2):219-227.
27. Roberts BJ, Friedlander SF. Tinea capitis: a treatment update. *Pediatr Ann.* 2005;34(3):191-200.
28. Bennett ML, Fleischer AB, Loveless JW, Feldman SR. Oral griseofulvin remains the treatment of choice for tinea capitis in children. *Pediatr Dermatol.* 2000;17:304-309.
29. Gupta AK, Adam P. Terbinafine pulse therapy is effective in tinea capitis. *Pediatr Dermatol.* 1998;15(1):56-58.
30. Kullavanijaya P, Reangchainam S, Ungpakorn R. Randomized single-blind study of efficacy and tolerability of terbinafine in the treatment of tinea capitis. *J Am Acad Dermatol.* 1997;37(2):272-273.
31. Haroon TS, Hussain I, Aman S, et al. A randomized, double-blind comparative study of terbinafine for 1, 2, and 4 weeks in tinea capitis. *Br J Dermatol.* 1996;135:86-88.
32. Krafchik B, Pelletier J. An open study of tinea capitis in 50 children treated with a 2-week course of oral terbinafine. *J Am Acad Dermatol.* 1999;41:60-63.
33. Jahangir M, Hussain I, Hasan M, Haroon TS. A double-blind, randomized, comparative trial of itraconazole versus terbinafine for 2 weeks in tinea capitis. *Br J Dermatol.* 1998;139:672-674.
34. Hamm H, Schwinn A, Brautigam M, et al. Short duration treatment with terbinafine for tinea capitis caused by *Trichophyton* or *Microsporum* species. *Br J Dermatol.* 1999;140:480-482.
35. Filho ST, Cuce LC, Foss NT, et al. Efficacy, safety and tolerability of terbinafine for tinea capitis in children: Brazilian multicentric study with daily oral tablets for 1, 2 and 4 weeks. *J Eur Acad Dermatol Venereol.* 1998;11:141-146.
36. Caceres-Rios H, Rueda M, Ballona R, Bustamante B. Comparison of terbinafine and griseofulvin in the treatment of tinea capitis. *J Am Acad Dermatol.* 2000;42:80-84.
37. Rademaker M. Griseofulvin and terbinafine in the treatment of tinea capitis in children. *NZ Med J.* 1998;111:55-57.
38. Gupta AK, Adam P, Dlova N, et al. Therapeutic options for the treatment of tinea capitis caused by *Trichophyton* species: griseofulvin versus the new oral antifungal agents, terbinafine, itraconazole, and fluconazole. *Pediatr Dermatol.* 2001;18(5):433-438.
39. Fuller LC, Smith CH, Cerio R, et al. A randomized comparison of 4 weeks of terbinafine vs. 8 weeks of griseofulvin for the treatment of tinea capitis. *Br J Dermatol.* 2001;144:321-327.

40. Fleece D, Gaughan JP, Aronoff SC. Griseofulvin versus terbinafine in the treatment of tinea capitis: a meta-analysis of randomized, clinical trials. *Pediatrics*. 2004;114(5):1312-1315.
41. Dragos V, Lunder M. Lack of efficacy of 6-week treatment with oral terbinafine for tinea capitis due to *Microsporum canis* in children. *Pediatr Dermatol*. 1997;14:46-48.
42. Tanuma H, Doi M, Nishiyama S, Katsuoka K. A case of tinea barbae successfully treated with terbinafine. *Mycoses*. 1998;41:77-81.
43. Bonifaz A, Ramirez-Tamayo T, Saul A. Tinea barbae (tinea sycosis): experience with nine cases. *J Dermatol*. 2003;30:898-903.
44. Jung EG, Haas PJ, Brautigam M, Weidinger G. Systemic treatment of skin candidosis: a randomized comparison of terbinafine and ketoconazole. *Mycoses*. 1994;37:361-365.
45. Scaparro E, Quadri G, Vimo G, et al. Evaluation of the efficacy and tolerability of oral terbinafine (Daskil[R]) in patients with seborrheic dermatitis. A multicenter, randomized, investigator-blinded, placebo-controlled trial. *Br J Dermatol*. 2001;144:854-857.
46. Bahamdan KA, Tallab TM, Johargi H, et al. Terbinafine in the treatment of cutaneous leishmaniasis: a pilot study. *Int J Dermatol*. 1997;36:59-60.
47. Gonzalez-Ruperez J, de Morlius MJ, Carazo AM. Remission of localized cutaneous leishmaniasis in a HIV-positive patient using systemic terbinafine. *Dermatology*. 1997;194:85-86.
48. Altomare GF, Capella GL, Boneschi V, Viviani MA. Effectiveness of terbinafine in cutaneous alternariosis. *Br J Dermatol*. 2000;142:840-841.
49. Sellier P, Monsuez JJ, Lacroix C, et al. Recurrent subcutaneous infection due to *Scopulariopsis brevicaulis* in a liver transplant recipient. *Clin Infect Dis*. 2000;30:820-823.
50. Chapman SW, Pappas P, Kauffmann C, et al. Comparative evaluation of the efficacy and safety of two doses of terbinafine (500 and 1000 mg/day) in the treatment of cutaneous or lymphocutaneous sporotrichosis. *Mycoses*. 2004;47(1-2):62-68.
51. Hull PR, Vismer HF. Treatment of cutaneous sporotrichosis with terbinafine. *Br J Dermatol*. 1992;126(Suppl 39):51-55.
52. Gupta AK, Nicol K, Batra R. Role of antifungal agents in the treatment of seborrheic dermatitis. *Am J Clin Dermatol*. 2004;5(6):417-422.
53. Leeming JP, Sansom JE, Burton JL. Susceptibility of *Malassezia furfur* subgroups to terbinafine. *Br J Dermatol*. 1997;137:764-767.
54. Gupta AK, Batra R, Bluhm R, Faergemann J. Pityriasis versicolor. *Dermatol Clin*. 2003;21:413-429.
55. Schiraldi GF, Colombo MD, Hariari S, et al. Terbinafine in the treatment of non-immunocompromised compassionate cases of bronchopulmonary aspergillosis. *Mycoses*. 1996;39:5-12.
56. Harari S, Schiraldi G, De Juli E, Gronda E. Relapsing *Aspergillus* bronchitis in a double lung transplant patient, successful treatment with a new oral antimycotic agent. *CHEST*. 1997;111:835-836.
57. Bryan CS, Smith CW, Berg DE, Karp RB. *Curvularia lunata* endocarditis treated with terbinafine: case report. *Clin Infect Dis*. 1993;16:30-32.
58. Villars VV, Jones TC. Special features of the clinical use of oral terbinafine in the treatment of fungal diseases. *Br J Dermatol*. 1992;126(Suppl 39):61-69.
59. Ghannoum MA, Elewski B. Successful treatment of fluconazole-resistant oropharyngeal candidiasis by a combination of fluconazole and terbinafine. *Clin Diagn Lab Immunol*. 1999;6(6):921-923.
60. Pappas PG, Rex JH, Sobel JD, et al. Guidelines for the treatment of candidiasis. *Clin Infect Dis*. 2004;38:161-189.
61. N'Diaye B, Dieng MT, Perez A, et al. Clinical efficacy and safety of oral terbinafine in fungal mycetoma. *Int J Dermatol*. 2006;45:154-157.
62. Ferahbas A, Koc AN, Uksal U, et al. Terbinafine versus itraconazole and fluconazole in the treatment of vulvovaginal candidiasis. *Am J Ther*. 2006;13(4):332-336.
63. Centers for Disease Control and Prevention, Workowski KA, Berman SM. Sexually Transmitted Diseases Treatment Guidelines 2006. Diseases characterized by vaginal discharge - vulvovaginal candidiasis. *MMWR Recomm Rep*. 2006; Aug 4;55(RR-11):1-94. Accessed on 07/22/2010 at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5511a1.htm>
64. Lamisil® oral granules [package insert]. East Hanover, NJ: Novartis Pharmaceuticals; September 2007.
65. Francesconi G, Valle A, Passos S, et al. Terbinafine (250 mg/day): an effective and safety treatment of cutaneous sporotrichosis. *J Eur Acad Dermatol Venereol*. 2009;23(11):1273-1276.
66. Queiroz-Telles F, Esterre P, Perez-Blanco M, et al. Chromoblastomycosis: an overview of clinical manifestations, diagnosis, and treatment. *Med Mycol*. 2009;47(1):3-15.
67. Terbinex™ tablets [package insert]. Hauppauge, NY: Invagen Pharmaceuticals, Inc; June 2009.

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