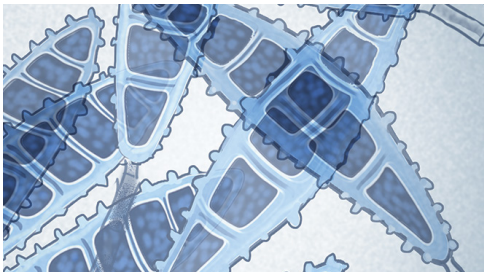
PATHOGEN PROFILE
PEER REVIEWED

Microsporum canis

Mitchell D. Song, DVM, DACVD
Animal Dermatology
Phoenix, Arizona



Terbinafine is well tolerated and may be used as an alternative when a toxic reaction develops after administration of other antifungal drugs.[8-12]

Itraconazole

Dogs: 5 mg/kg PO once a day for 7 days, stop for 7 days; repeat pattern 3 times[1,2]

Cats: 5 mg/kg PO once a day for 7 days, stop for 7 days; repeat pattern 3 times[1,2]

Itraconazole, a fungistatic triazole, inhibits the cytochrome P450 enzyme lanosterol 14α-demethylase, which converts lanosterol to ergosterol.[3] Decreases in ergosterol affect membrane permeability. Avoid alkalinizing agents (eg, H_2-blockers, antacids).[3] Alanine aminotransferase (ALT) and serum alkaline phosphatase (SAP) levels may rise without liver disease signs, though hepatotoxicity is rare.[3]

In cats, the oral solution is preferred to capsules.[4] Generic and compounded itraconazole have not been shown to be bioequivalent to Sporanox (janssenpharmaceuticalsinc.com).[5] Generic formulations have shown similar pharmacokinetic data; compounded itraconazole has produced low plasma concentrations in dogs and should be avoided.[5]

Terbinafine

Dogs (Oral): 30-35 mg/kg PO once a day[6,7]

Cats (Oral): 20 mg/kg PO once a day[6,8]

Dogs, Cats (Topical): Apply to affected areas once or twice a day[9]

Formulation: Topical, oral

Terbinafine, an allylamine antifungal agent, is effective and concentrates well in the skin, is well tolerated, and may be used as an alternative when a toxic reaction develops after administration of other antifungal drugs.[8-12] To date, there have been no efficacy comparison studies between itraconazole and terbinafine.

Fluconazole

Dogs: 5-10 mg/kg PO twice a day[13-15]

Cats: 50 mg/cat PO once a day[14,15]

Fluconazole is a fungistatic bistriazole that inhibits cytochrome P450-mediated sterol synthesis.[1] Food and gastric pH do not alter bioavailability; it is well tolerated orally.[14,15]

Topical Recommendations

(twice a week)[16]

- Lime sulfur (1:16)
- Enilconazole (1:100)
- Accelerated hydrogen peroxide rinse (1:20)
- Climbazole mousse
- Ketoconazole (1%-2%) shampoo
- Miconazole (1%-2%) shampoo

Compounded itraconazole has produced low plasma concentrations in dogs and should be avoided.[5]

H_2 = histamine receptor H_2

MITCHELL D. SONG, DVM, DACVD, is a dermatologist at Animal Dermatology, Phoenix, Arizona. He also is adjunct clinical associate professor at Midwestern University College of Veterinary Medicine and a member of American Academy of Dermatology (AAD), American Academy of Veterinary Dermatology (AAVD), and International Society of Veterinary Dermatopathology (ISVD). Dr. Song earned his DVM from Mississippi State University and completed a dermatology residency at University of California, Davis.

REFERENCES

1. Miller WH Jr, Griffin CE, Campbell KL. Fungal and algal skin diseases. In: Miller WH Jr, Griffin CE, Campbell KL, eds. *Muller and Kirk's Small Animal Dermatology*. 7th ed. St. Louis, MO: Elsevier Mosby; 2013:223-283.
2. Moriello KA. Treatment of dermatophytosis in dogs and cats: review of published studies. *Vet Dermatol*. 2004;15(2):99-107.
3. de Jaham C, Paradis M, Papich MG. Antifungal dermatologic agents: azoles and allylamines. *Compend Contin Educ Pract Vet*. 2000;22(6):548-559.
4. Boothe DM, Herring I, Calvin J, Way N, Dvorak J. Itraconazole disposition after single oral and intravenous and multiple oral dosing in healthy cats. *Am J Vet Res*. 1997;58(8):872-877.
5. Mawby DI, Whittemore JC, Genger S, Papich MG. Bioequivalence of orally administered generic, compounded, and innovator-formulated itraconazole in healthy dogs. *JVIM*. 2014;28(1):72-77.
6. Sakai MR, May ER, Imerman PM, et al. Terbinafine pharmacokinetics after single dose oral administration in the dog. *Vet Dermatol*. 2011;22(6):528-534.
7. Wang A, Ding H, Liu Y, Gao Y, Zeng Z. Single dose pharmacokinetics of terbinafine in cats. *J Feline Med Surg*. 2012;14(8):540-544.
8. Castañón-Olivares LR, Manzano-Gayosso P, López-Martínez R, De la Rosa-Velázquez IA, Soto-Reyes-Solís E. Effectiveness of terbinafine in the eradication of *Microsporum canis* from laboratory cats. *Mycoses*. 2001;44(3-4):95-97.
9. Plumb DC. Brief Media. Plumb's Veterinary Drugs. plumbsveterinarydrugs.com. Accessed June 25, 2015.
10. Sykes J. Treatment of fungal infections: the which, why and how of antifungal drug therapy. *ACVIM Forum Proceedings*. New Orleans, LA. 2012.
11. Balda AC, Otsuka M, Larsson CE. A clinical trial using griseofulvin and terbinafine in the treatment of canine and feline dermatophytosis. *Ciência Rural*. 2007;37(3)750-754.
12. Hosseini-Yeganeh M, McLachlan AJ. Physiologically based pharmacokinetic model for terbinafine in rats and humans. *Antimicrob Agents Chemother*. 2002;46(7)2219-2228.

MORE on page 23 ▶