

Malassezia Dermatitis

Rudayna Ghubash, DVM, DACVD

Animal Dermatology Clinic

Marina del Ray, CA

Malassezia pachydermatis is a commensal yeast organism that is a normal resident of the skin, mucosa, and ear canals. Cutaneous and immunological factors can cause this yeast to multiply and aid in it becoming a pathogenic organism. The diagnosis of *Malassezia* dermatitis is based upon the history, dermatological examination, cytological results, and response to therapy. It should also be noted that *Malassezia* dermatitis in the cat is more rare than in the dog, and generalized *Malassezia* dermatitis infections in the cat are often associated with more serious underlying conditions, such as paraneoplastic syndrome.

Diagnosing *Malassezia* dermatitis and otitis

Studies have attempted to determine what the normal amount of yeast should be on the skin and ears. In the canine, the presence of ≥ 1 yeast/high power field (HPF) (400X) on the skin and ≥ 4 yeast/HPF in the ears is considered abnormal.

The author uses routine Dif-Quik cytology to stain ear swab samples, preferring tape strip samples and direct impression slides when obtaining samples from the skin. When using the tape strip, it is imperative to use clear tape and only put it in the light blue fixative for 5 dips, a more prolonged time will cause clouding of the slide and make it difficult to interpret. Cytology will reveal oval or elongated cells of 3-5 μm in diameter with a typical single polar budding (footprints, peanuts, etc.). Although technically greater than 1 yeast/HPF is considered significant, the author believes that certain breeds tend to have a *Malassezia* hypersensitivity and respond amazingly well to antifungal therapy even when few yeast are present. The West Highland white terrier is the classic example of this.

Malassezia organisms can be demonstrated on histopathology, but the sensitivity is less than that of cytology. If the organisms are not present on a biopsy sample, that does not eliminate the possibility of them being present.

The decision of treating topically alone or systemically in conjunction with topical treatment depends on the case. If there is a gray zone and you are not sure what to do, begin by treating topically and reevaluate cytologically in 2-3 weeks. If there is an increase in the number of organisms seen on cytology, systemic treatment is indicated. If there is no increase in the number of organisms but the patient is not responding, make sure that other disease processes are not responsible for the lack of response (such as atopic dermatitis).

Treatment of *Malassezia* otitis externa (cat and dog)

Appropriately treating yeast otitis externa is dependent upon appropriately cleaning the ear and choosing an effective ear cleanser and ear drop. Cleaning the ear allows for removal of exudate to allow ear medications to be more effective, can change the environmental pH so it is less suitable for yeast overgrowth, and some ear cleaners even have antifungal effects. Previous studies have shown that Epiotic® (Virbac), at a 1:5 dilution with distilled water, can kill yeast in vitro within 4 minutes. A study performed at the Ohio State University found that 16/22 (72%) cases of dogs with yeast otitis externa responded to two weeks of twice daily cleanings with Epiotic. In another study, DermaPet Skin/Ear Cleanser® (DermaPet) was reported to resolve 70.6% of yeast otitis externa cases within one week. Because of the labor and lack of 100% efficacy, the author prefers to combine twice weekly ear cleanings with twice daily use of medicated ear drops. Typically two weeks of treatment is recommended, optimally with a follow up recheck to evaluate if additional therapy or change in therapy is needed.

Many antifungal otic preparations are available on the market and include miconazole, clotrimazole, thiabendazole, and nystatin. The author prefers using the azole derivatives, especially miconazole.

Topical therapy of *Malassezia* dermatitis (dog and cat)

Many topical agents are effective at killing *Malassezia* organisms, including selenium sulfide, acetic acid, miconazole, ketoconazole, clotrimazole and chlorhexidine. These medications are available in different forms such as shampoos, leave on conditioners, wipes, etc. If treating a mild-moderate case of *Malassezia* dermatitis I will have the owners bathe once-twice weekly with Malaseb Shampoo® (DVM), Miconazole Shampoo® (Vetoquinol), KetoChlor® (Virbac) or MalAcetic® (DermaPet). If I have an incredibly greasy *Malassezia* dog, I will have the owners get Selsun Blue® (Ross) shampoo from a drug store and bathe the dog twice a week. Selsun Blue® should NOT be used on cats. The leave on conditioner ResiZole® (Virbac) can also be used in such cases if it is easier for the owner to apply a lotion rather than bathing. For treating areas such as skin folds, lip folds and nail beds I prefer using Malaseb Pledgets® (DVM).

Systemic treatment of *Malassezia* dermatitis in the canine

Ketoconazole, itraconazole, fluconazole and terbinafine have all been found to be effective for *Malassezia* dermatitis. The author has had very good success utilizing ketoconazole (Nizoral®, Janssen) and itraconazole (Sporonox®, Janssen) dosed at 5mg/kg/day. Many

cases will need initial treatment duration of 14 to 21 days, while others may require additional alternate day or daily therapy for another 14 to 21 days. Because itraconazole stays in the stratum corneum for a prolonged period of time, pulse therapy can be employed. A study performed at the Ohio State University found that dogs treated with 5mg/kg/day for 2 days followed by 5 days without treatment for 3 cycles (i.e. 3 weeks) responded just as well as dogs who received the medication at 5mg/kg/day for 21 consecutive days.

Fluconazole (Diflucan®, Pfizer) and terbinafine (Lamisil®, Novartis) are two other options for patients with Malassezia dermatitis. The dose for fluconazole typically used is 2.5-mg/kg/day, while the dose for terbinafine is 30mg/kg.day. The author has used fluconazole extensively due to its recent drop in price and wide safety margin, but finds that it can be less effective than the other azoles in some patients. Terbinafine has recently become generic, and has used it successfully in a handful of cases that have not responded to or didn't tolerate the azoles.

****Regardless of which oral treatment is started, recheck in 2-3 weeks prior to the medication running out is recommended to assess treatment efficacy****

The main side effect of all these medications is gastrointestinal, but the azoles can cause adverse reactions in the liver, drug reactions and have serious drug interactions. The medications are metabolized by the P450 liver enzyme, and will therefore interact with other medications metabolized by the same system (such as cyclosporine). In one study, 7.5% of patients treated with a dose of ≥ 10 mg/kg/day of itraconazole developed a drug induced vasculitis. Due to these reasons, caution should be taken before using these medications in dogs with history of liver disease. The author generally recommends checking bloodwork in animals over the age of 7 before using ketoconazole.

If the infection is recurrent and the underlying disease can not be determined or controlled, anecdotal reports indicate that pulse therapy with ketoconazole or itraconazole at 5mg/kg or fluconazole at 2.5-5mg/kg once-twice weekly can be effective. Some dermatologists are also now adding Malassezia into immunotherapy in patients with atopic dermatitis that are positive to Malassezia on allergy tests for additional longterm control of Malassezia dermatitis.

It should be noted that it is recommended to administer ketoconazole, itraconazole capsules, fluconazole and terbinafine with food. It is recommended to administer liquid itraconazole (Sporonox®) one hour before or two hours after a meal for optimal absorption. Typically compounded itraconazole liquid is not as effective as Sporonox® liquid.

Systemic treatment of Malassezia dermatitis in the feline

Because of concerns over gastrointestinal upset and hepatotoxicity, the author does not use or recommend ketoconazole for treatment of Malassezia in cats. At this time, there is limited information about treating Malassezia dermatitis in cats with terbinafine.

Fluconazole and itraconazole tend to be safe, well tolerated and effective in the treatment of Malassezia dermatitis in the cat. The author typically uses a fluconazole dose of 5mg/kg/day and reevaluates in three weeks, although doses ranging from 2.5-10mg/kg/day are reported in the literature. The author typically doses itraconazole at 5mg/kg/daily and reevaluates in three weeks, although pulse therapy as listed for the dog above can be attempted.

Conclusion

It is incredibly important to remember that Malassezia dermatitis is almost always secondary to an underlying disease (allergic disease, keratinization defect, endocrinopathies, etc.). Without addressing the underlying problem there will be continued relapse and reoccurrence of the yeast infection.