

DERMATOLOGY PEARLS

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www.dermvettacoma.com www.dermvetolympia.com

Pearl of the month: Canine Recurrent Pyoderma

Canine recurrent pyoderma can be a frustrating disease to treat, but keeping three things in mind will make this common disease easier to manage: 1. Treat infection with the appropriate systemic antibiotics for the appropriate time period; 2. Use effective adjunctive topical antibacterial therapy; and 3. Identify and treat the underlying cause.

1. Antibiotic therapy: When choosing empiric antibiotics, it is first important to *avoid* antibiotics to which staphylococcal bacteria are usually intrinsically resistant, including amoxicillin, ampicillin, penicillin, tetracycline, and non-potentiated sulfonamides. Antibiotic classes which are usually effective for canine pyoderma include cephalosporins, macrolides, lincosamides, potentiated sulfonamides, B lactamase resistant penicillins, fluoroquinolones, aminoglycosides, and chloramphenicol. Most veterinary dermatologists use cephalosporins, clindamycin, clavulated penicillin or potentiated sulfonamides as first line therapy for canine pyoderma. Doxycycline, chloramphenicol and aminoglycosides are used more rarely, and usually as dictated by culture results in methicillin-resistant staphylococcal infections. Fluoroquinolones are used as second line therapy when indicated by culture, for deep, fibrotic infections, and for *Pseudomonas* infections. Veterinary labeled fluoroquinolones (which have near complete bioavailability) are preferred over generic ciprofloxacin due to marked variability of ciprofloxacin absorption in dogs. In one study, the oral absorption of generic ciprofloxacin tablets in dogs ranged from 29% to 98%. This may result in therapeutic failure and increased selection of resistant bacteria, particularly when low doses are recommended. Use of fluoroquinolones should also be carefully assessed in view of associations found between fluoroquinolone use in hospitals and methicillin resistance in *S. aureus*, and between fluoroquinolone use in communities and fluoroquinolone resistance in *E. coli* in hospitals. After an antibiotic has been selected, it should be dispensed at the correct dosage, administered at the correct dosing interval, and used for a sufficient period. Underdosing an antibiotic due to concern for cost savings for the client will only cost more in the long run due to increased time to cure and increased chance of inducing bacterial resistance, necessitating more expenses such as cultures and additional antibiotic courses. The duration of antibiotic therapy depends on several factors, including the depth of the pyoderma, underlying diseases, and use of concomitant topical therapies. In general, superficial pyodermas usually resolve with a 3 week course of an antimicrobial, or 1-2 weeks beyond healing of surface lesions. For deep pyoderma, a 6-12 week course of treatment (3 weeks beyond normalcy) or even longer may be required to resolve deep pockets of infection. Regular rechecks are important to determine response to therapy and need for medication refills or therapy modifications. Culture of a patient with bacterial pyoderma is recommended if bacteria persist cytologically despite empiric antibiotic therapy (especially if a patient with recurrent pyoderma has been treated with multiple prior antibiotics), if primarily rod-shaped bacteria are found on cytology of lesions, and in cases of deep pyoderma.

2. Topical antibacterial therapy: Unless skin infection is very mild or shampoo therapy is done every 1-2 days, topical therapy alone is unlikely to resolve a more generalized pyoderma, but topical therapy can be very helpful to abbreviate infection when used in combination with systemic antibiotics. Chlorhexidene products have superior bacterial killing effects compared to most other products; this link details the multiple topical therapy options:

http://www.dermvetvegas.com/pdfs/CaninePyoderma_TopicalAntibacterial.pdf

3. Underlying causes: The most common underlying conditions for chronic or recurrent canine pyoderma include hypersensitivity dermatitis, parasitic skin infestations, endocrinopathies, follicular dysplasia disorders, and keratinization disorders. In one prospective study of 30 cases of canine recurrent pyoderma, atopic dermatitis was found to be the underlying cause in 60% of cases, food allergy, flea allergy and hypothyroidism in 7% of cases respectively, and hyperestrogenism, demodicosis and zinc responsive dermatosis each accounted for 4% of cases. In only two dogs was an underlying cause not identified. Atopic dogs are prone to recurrent skin infections due to increased adherence of staphylococcal bacteria to atopic canine skin cells, alterations in normal skin barrier function, and altered skin immune system function.

For more information, see the full articles at these links:

<http://todaysveterinarypractice.epubxp.com/issue/54683/31> and
<http://todaysveterinarypractice.epubxp.com/i/61244/45>