

DERMATOLOGY PEARLS

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PEARL OF THE MONTH: UPDATES FROM THE ACVD MEETING

Relationship of body weight to cyclosporine dose in canine atopic dermatitis

L.B. Cohen, S. Zabel, F. Olea-Popelka, S. Rao, R.A.W. Rosychuk

Cyclosporine A is a commonly prescribed and effective therapy for canine atopic dermatitis. Eighty five cases of canine atopic dermatitis treated between 2000 and 2010 were evaluated retrospectively to determine whether canine body weight was related to the ultimate effective dose of cyclosporine (Atopica) required over a 6 month treatment time period. Patients were placed into groups based on weight, with dogs in group A weighing less than 15kg and dogs in group B weighing more than 15kg. Results: Compared to dogs in group A, dogs in group B required a mean of 4.40 mg/kg/day cyclosporine A, 0.53mg/kg/day less ($p<0.0001$) across all time points. There was a mean 0.04mg/kg/day decrease ($p<0.0001$) in cyclosporine A received per one kilogram increase in body weight. Concurrent steroid dose, medication score, and pruritus score did not differ between the groups. *This finding suggests that differential cyclosporine A dosing may be warranted based on body weight.*

Absorption of transdermal cyclosporine versus orally administered cyclosporine in six healthy cats

R. Miller, A. Schick, D. Booth, T. Lewis

Cyclosporine is a commonly used oral medication in the treatment of feline dermatoses. Due to the difficulty of administering oral medications in cats, compounded transdermal cyclosporine is prescribed by veterinarians, although human studies show limited transdermal absorption. The objective of this pilot study was to compare blood cyclosporine concentrations (Atopica) after oral administration to blood cyclosporine concentrations after a compounded transdermal formulation. Cyclosporine was given orally at 5.1 to 7.4 mg/kg once daily for 7 days to six healthy cats. On day 7, cyclosporine was measured in whole blood samples collected 2 and 12 h post dosing. After a 2 week washout period, cyclosporine concentrations were measured, and 0.1 ml (5.1-7.4 mg/kg) of transdermal cyclosporine, formulated in pluronic lecithin organogel at 250 mg/ml, was applied to the non-haired portion of the pinna once daily on each cat for 21 days. Cyclosporine was measured 2 and 12 h post dosing on day 7, 14, and 21. Results: Median oral-dosed cyclosporine concentration (ng/ml) at 2 h on day 7 was 2208 (range 1357 to 3419). Median transdermal-dosed cyclosporine concentration at 2 h on day 7 was 37 (range 25 to 290) and for day 21 was 58 (range 51 to 878). Concentrations were quantifiable for transdermal cyclosporine, but concentrations were only therapeutic in 1/6 cats. Based on the results of this study, *transdermal cyclosporine should not be recommended in cats because of inconsistent absorption.*

Frequency of urinary tract infection in dogs treated with oral cyclosporine: a retrospective study of 87 cases

A. Peterson, S. Torres, A. Rendahl

The main goal of this study was to evaluate the frequency of urinary tract infection (UTI) in dogs receiving cyclosporine therapy. Patients were enrolled if they met the following inclusion criteria: (i) at least one routine urine culture performed by cystocentesis after five or more months of cyclosporin therapy; (ii) known inflammatory skin condition; (iii) no antibiotic therapy at time of urine collection; and (iv) no concurrent diseases known to predispose to urinary tract infections. Control urine cultures were performed from 59 dogs with inflammatory skin conditions (almost 80% of these allergic dogs) that had not received glucocorticoids or cyclosporine for six months or antibiotics for three months. The first urine culture from all cyclosporine treated dogs was compared to control samples. Results: Compared to 2/59 (3%) positive samples in control dogs, 13/87 (15%) were positive in treated dogs. This difference was significant (Fisher's exact test, $P=0.027$). The cyclosporine treated cases were then divided into dogs concurrently receiving glucocorticoids (CsG) and dogs only receiving cyclosporine (Cs). 4/16 (25%) first cultures were positive in CsG treated dogs, and 9/71 (13%) cultures were positive in Cs treated dogs. Bacteriuria showed a sensitivity and specificity for predicting UTI of 64.1% and 98.1%, respectively. *Routine urinalysis and urine culture are recommended with long-term cyclosporine therapy.*