Cyclosporine (CsA) is licensed for the treatment of canine atopic dermatitis, the target dose for which is 5 mg/kg PO q24h, presumably for the duration of life. Although effective, the drug can be cost prohibitive, so methods to decrease cost have been attempted. One off-label protocol is to combine CsA with ketoconazole (KTZ); both drugs are metabolized by liver cytochrome P450 enzyme. Anecdotal evidence, despite a lack of studies, suggests that concurrent administration of ketoconazole may decrease CsA dose by as much as 50% while still maintaining therapeutic CsA concentrations.

Whole blood and skin concentrations of CsA were determined in 4 treatment protocols: CsA at 5 mg/kg/day (treatment 1), CsA at 2.5 mg/kg/day (treatment 2), CsA at 2.5 mg/kg/day and KTZ at 2.5 mg/kg/day (treatment 3), and CsA at 2.5 mg/kg/day and KTZ at 5 mg/kg/day (treatment 4). Six laboratory beagles were randomly assigned to a treatment protocol for 7 days, followed by a washout and assignment to a second protocol; peak and trough blood and skin samples were collected and CsA assays performed. Mean blood concentrations in the treatment 1 group were not different than those in treatment groups 2 and 4. Mean skin concentrations in treatment 1 were greater than treatment 2 concentrations, not different than those in treatment 4, and less than those in treatment 3.

Commentary

Even though this study demonstrated administration of KTZ at 5 mg/kg/day and CsA at 2.5 mg/kg/day may be as effective as CsA at 5.0 mg/kg/day alone, this is off-label use. I do not support this drug combination for several reasons: First, it is important to know whether a dog responds to CsA; starting a drug combination that may be as effective is not the same as knowing it will be effective. Second, many dogs can be transitioned to q48h dosing of CsA, decreasing dose and cost. Third, routine laboratory monitoring of serum biochemistry profiles is necessary in dogs receiving KTZ; concurrent use may be false economy. On a final note, atopic dermatitis management is complex and requires tending to many flare factors.

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Source


For more information on cyclosporine, see Cyclosporine: An Overview for Alternative Use by Dr. Alexander Werner in the December 2012 issue or at cliniciansbrief.com/cyclosporine-alternative-use

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