Articles

The Pros and Cons of Cyclosporin in the Treatment of Atopy

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One of the most frequent questions we receive from referring veterinarians and clients at our office is “what do you think of cyclosporin, and does it work for the treatment of atopy?” We have been using cyclosporin for the treatment of refractory atopic cases since 1996. Like all of our therapeutic options for atopy, it has both pros and cons.

Cyclosporin is a fat-soluble cyclic polypeptide derived from the fungus Tolypocladium inflatum gams. It was originally developed for the prevention of organ transplant rejection. Its use, however, has been expanded in both human and veterinary medicine. It affects primarily T cell activity and interleukin production. The drug is absorbed best when in a microemulsified formulation. It is now available and approved for veterinary use under the brand name Atopica (Novartis Animal Health). The human counterpart drug is Neoral or the generic product Gengraft.

When used for atopic patients, we generally expect to see a favorable response within the first two weeks, although some patients are reported to require four to six weeks to respond. It has a relatively low toxicity, but the most common side affect that we see is gastrointestinal upset, especially vomiting. The drug has maximum absorption when given on an empty stomach, although giving the drug with food may decrease the incidence of vomiting. Less common side affects which are reported and which we have seen include gingival hyperplasia and papillomatous (wart-like) growths on the skin. The starting dose is 5 mg/kg orally daily. If improvement in clinical signs is seen, the dose may be decreased to every other day usage or less. Although reported, we do not often find patients whose symptoms are able to be adequately controlled at a cyclosporin dose of less than 5

mg/kg every other day. We also do not, in general, add other drugs such as ketoconazole to increase blood levels of cyclosporin due to our concerns of increased liver toxicity. In addition to ketoconazole, other drugs reported to decrease the metabolism of cyclosporin (and thereby increase its blood levels) include itraconazole, fluoroquinolone antibiotics, calcium channel blockers, erythromycin, metoclopramide and others.

When deciding on appropriate therapy for an atopic patient there are many factors which should be considered. The severity of the disease, the duration (short-term seasonal vs. year round) and the age of the patient are some of the important variables. When treating atopic dermatitis, we consider basic supportive care to include frequent baths (which wash allergens off the coat and so reduce percutaneous absorption), antipruritic sprays or conditioners, antihistamines and essential fatty acid supplementation. Unfortunately, there are many patients for which this approach is inadequate in controlling pruritus. In those cases, the remaining treatment options are systemic corticosteroids, allergen specific immunotherapy (desensitization) and cyclosporin. Steroids offer the fastest and least expensive relief but obviously have the most long-term side affects, which are well known. Allergen-specific immunotherapy is the safest long-term option but often requires several months before improvement is seen. This approach has a greater upfront cost because of the expense of allergy testing, but maintenance therapy is less costly. Cyclosporin is less toxic than steroids, but there are reports of cases of systemic infections such as fatal toxoplasmosis and atypical mycobacteriosis in cats treated with cyclosporin. Additionally, chronic immunosuppressive therapy such as cyclosporin may predispose patients to development of neoplasia due to suppression of immunosurveillance. Long-term therapy with cyclosporin remains the most expensive medical option for atopy.

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2. D. Robson, et al.
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Cyclosporin decreases skin lesions and pruritus in dogs with atopic dermatitis: a blinded randomized prednisolone-controlled trial. Veterinary Dermatology 2002; 13: 77-87.