Sublingual Immunotherapy

Thomas P. Lewis II, DVM, DACVD • Dermatology for Animals • Gilbert, Arizona

The process of desensitizing an allergic patient with sublingual drops of allergens instead of utilizing subcutaneous injections has been possible in human medicine for many years. Over the last several years, there has been more interest and experience with this modality in veterinary medicine, giving the practitioner, such as myself, who treats atopic patients with immunotherapy a welcome, safe and effective additional option.

Why treat atopic dermatitis with immunotherapy?

Allergy immunotherapy, whether given by injection or sublingually, will oftentimes arrest the development of hypersensitivities to additional allergens. This can be especially important in the young patient with a lifetime remaining and the potential to get worse. When a patient has been confirmed to have atopic dermatitis and is suffering for more than a few months of the year, then allergy testing and immunotherapy of some form should be strongly recommended. Despite the fact that corticosteroids or cyclosporine can control clinical signs of pruritus, they do not stop the progression of the disease or the development of additional allergies that can lead to an increase in pruritus and an increase in medications needed to control these clinical signs.

What is SLIT?

Sublingual Immunotherapy (SLIT) is an alternative way to treat atopic dermatitis. SLIT involves placing allergenic extract under the patient's tongue for absorption rather than a subcutaneous injection. Allergen solutions for SLIT are often formulated with 50% glycerin to increase the persistence of allergen in the oral cavity. GREER® Aller-g-complete® Drops from IDEXX are labeled at 20,000 PNU and are given to the patient once daily for continuous benefit. Before determining the best allergen vial composition, it is important to correlate the allergy test results with the patients' history of pruritus and patterns of exposure. Then the optimal formulation and route of administration for the individual patient can be established.

Why is SLIT a good alternative to injectable immunotherapy?

Some owners are afraid of needles

Many people are reluctant to administer injections and are happy to have the option of an oral route of administration, and it would seem that most dogs prefer a drop of slightly sweet product placed in their mouth over an injection.

SLIT may be safer in some patients

Patients who experience adverse reactions to allergen injections should be considered excellent candidates for SLIT.[1,2] In our practice, we have had patients that reacted with anaphylaxis to either the intradermal allergy test or their injectable allergens, but they have tolerated and responded well to SLIT.

Some animals respond better to SLIT

Some patients that have failed to respond adequately to injectable immunotherapy may respond well to SLIT. The first patient I ever started on SLIT had been on injectable immunotherapy for nearly 2 years with only marginal improvement. The owners reported significant improvement after less than 30 days of SLIT.

A daily routine is easier for some owners

Maintenance allergen injections are usually administered every 1–3 weeks; whereas, SLIT requires daily or, with some protocols, twice daily administration. Although this may be considered a drawback of maintenance SLIT compared to injectable immunotherapy, daily medication may be more easily remembered by the owner, and the consequence of missing a dose is much less significant.

What is the dosing schedule for SLIT?

The efficacy of SLIT has been definitively proven in humans, but we are still awaiting double-blind, placebo-controlled studies in our animal patients.[1,2] Nevertheless, the findings of many experienced busy dermatologists, including myself, are that the efficacy of SLIT appears to be as good as that seen with injectable immunotherapy, and for some patients, their response may be better. What is not yet known is the optimal protocol regarding dosing schedules, concentration and frequency. However, GREER® has consulted with veterinary dermatologists, including myself, to develop GREER Aller-g-complete Drops.

These liquid allergy drops are available from IDEXX along with a clear dosing schedule that has been shown to be effective and has worked in the majority of my patients. I currently start all my new patients on sublingual immunotherapy and will switch to injectable only if I'm not seeing a response. Like many aspects of allergy and immunotherapy, it is likely that "one size does not fit all" and fine tuning of sublingual immunotherapy may be necessary in some patients just as it is with injectable protocols. For example, some patients may require one pump of the 140 μL once daily, whereas other patients may respond well to as little as 50 μL once daily.

Conclusion

The option to administer allergens in a sublingual format is an exciting, safe and affordable treatment modality. Its higher safety level, ease of administration and potentially equal or better efficacy for many patients compared to conventional immunotherapy should lead to SLIT being recommended early as a treatment option for the atopic patient.

EXAMPLE:

Allergy Drops Dosage Schedule

		Dose	Check the Box for Each Day of Treatment						
Suggested Build-Up Phase **Build-up Phase** dose administered daily, gradually increasing to maximum tolerated dose	**Week 1**	One (1) pump of the BLUE (50µL) pump under the tongue once daily.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐
	Week 2	Two (2) pumps of the BLUE (50µL) pump under the tongue once daily.	8 ☐	9 ☐	10 ☐	11 ☐	12 ☐	13 ☐	14 ☐
	Week 3	Replace the BLUE pump with the WHITE (140 µL) pump. One (1) pump of the WHITE (140 µL) pump once daily under the tongue.	15 ☐	16 ☐	17 ☐	18 ☐	19 ☐	20 ☐	21 ☐
Suggested Maintenance Phase **Maintenance Phase** maximum tolerated dose administered daily	If your pet completes Week 3 above, continue once daily at this dose on an ongoing basis.								
Maximum Tolerated Dose	Every pet is different, so a smaller dose may be better for your pet. The maintenance dose can range from 50 µL (1 pump using BLUE) to 140 µL (1 pump using WHITE). Continue the dose that your veterinarian recommends once daily on an ongoing basis. **My Pet's Maintenance Dose:** ☐ **Blue (50 µL) 1 pump** ☐ **Blue (50 µL) 2 pumps** ☐ **White (140 µL) 1 pump**								

Figure 1. Example of a dosing schedule.

Sample Case

Ruby is a 2-year-old boxer with a history of year-round pruritus, which began when she was just over 6 months of age. Ruby had failed to respond to various food trials, so intradermal allergy testing was performed and revealed significant positive reactions to more than 50 different allergens. The 12 most clinically relevant allergens were chosen for her vial, and Ruby was then started on sublingual immunotherapy at a dose of 50 µL once daily and a small dose of methylprednisolone, of which she only needed two doses. At the 6-week recheck, Ruby was doing very well, and therefore, her daily dose of immunotherapy was not increased. Ruby demonstrates how quickly some patients receiving SLIT can improve.

References

1. Lombardi C, Incorvaia C, Braga M, Senna G, Canonica GW, Passalacqua G. Administration regimens for sublingual immunotherapy to pollen allergens: what do we know? *Allergy.* 2009;64(6):849–854.
2. Rodriguez F, Boquete M, Ibáñez MD, de la Torre-Martinez F, Tabar AI. Once daily sublingual immunotherapy without updosing—a new treatment schedule. *Int Arch Allergy Immunol.* 2006;140(4):321–326.

IDEXX LABORATORIES