**ABSTRACT**

Allergen-specific immunotherapy is commonly administered via the sublingual route (SLIT) in human atopic disease. There is renewed interest in SLIT for atopic dermatitis in man, especially with recent evidence that it may function by different mechanisms than does injection immunotherapy. A previous pilot study of SLIT therapy was conducted in dogs to house dust mites provided evidence of clinical benefit and consistent immunologic change. The present study evaluated SLIT in dogs in a larger group of dogs. Nine veterinary dermatology specialty clinics enrolled a total of 217 dogs with atopic dermatitis in an open study on the efficacy of SLIT. All dogs received twice-daily administration of an escalating-dose, non-aqueous SLIT formulation devised according to individual tested sensitivities. The response of each patient after at least 6 months of SLIT was graded by the clinician according to four subjective response categories. Of 124 evaluable cases, 68 dogs (55%) were judged to have a good-to-excellent response to SLIT. Among these 124 dogs, 77 dogs that had received no previous immunotherapy had a response rate of 59%. The remaining dogs (n=47) had failed injection immunotherapy due to lack of efficacy, adverse reactions, or compliance difficulties. Of these failure cases, 23 dogs (49%) had a good-to-excellent response to SLIT. In this multicentre, open trial, we conclude that SLIT appears to be an effective treatment for canine atopic dermatitis, including in dogs that have failed injection immunotherapy.

**MATERIALS AND METHODS**

SLIT therapy was studied in an open-label, uncontrolled field study conducted at the Veterinary Medical Teaching Hospital (VMTH), University of Wisconsin-Madison and at eight other geographically-diverse, U.S. dermatology specialty clinics, with a total of 18 veterinarians participating.

**RESULTS**

A total of 217 dogs were evaluated for their response to SLIT treatment (86 from the UW-VMTH and 131 from other practices). Of these dogs, 48 could not be evaluated due to lack of follow-up ("NF"). An additional 45 dogs were not evaluable at the time of data collection because concurrent medication had not yet been tapered ("ND"). In all, 124 of the patients had evaluable responses. Successful response to treatment was defined as either Response Category C or D (good-to-excellent; disease under control with SLIT with little or no additional concurrent medication needed). Using this definition, the overall successful response rate was 55% (Fig. 2a). Of 77 dogs that had not had previous immunotherapy, 59% responded to SLIT (Fig. 2b). In 47 dogs that had failed prior injection immunotherapy, the response rate was 48% (Fig. 2c).

**DISCUSSION**

- Data collected was subjective and empirical. Response rates are estimates, since a large number of patients were not evaluable for one reason or another.
- Successful SLIT treatment in allergy shot failures suggests the mechanism of action of SLIT in dogs may differ from that of injection immunotherapy, an observation that has an established basis in human immunologic studies.
- Some dogs had experienced anaphylaxis from allergy shots, and were safely treated with SLIT; this is also the case in human beings.
- We were impressed how many owners were pleased to not have to give their pets injections. SLIT may allow more owners to access immunotherapy, who would not have considered it previously.

**CONCLUSIONS**

- In this open field trial, sublingual immunotherapy (SLIT) was a successful treatment in 59% of evaluable patients who had not had previous immunotherapy. This approximates the response typically reported for subcutaneous immunotherapy.
- In addition, SLIT was a safe and successful treatment in 49% of patients who had failed previous allergy shot treatment.
- Further studies are warranted including controlled trials and additional study of serologic changes occurring during treatment.

**REFERENCES AND FOOTNOTES**

- The authors are grateful to the following veterinary clinics for participation: Dermatology Clinic for Animals (Los Angeles, CA); Upstate Veterinary Specialists (Latham, NY); Multispecialty Dermatology Clinic (Columbus, OH); DVM Referral Center of Columbus (Brooksville, CO); BluePearl Veterinary Partners (Tampa, FL); Veterinary Dermatology (Montreal, FL); Riverbend Dermatology (Vero Beach, FL); College of Veterinary Medicine, Texas A&M University (College Station, TX).
- Allergychoices, Inc., La Crosse, WI USA.

**TABLE 1: Response Category System for Evaluation of Patient Clinical Responses by the Veterinarian**

<table>
<thead>
<tr>
<th>RESPONSE CATEGORY</th>
<th>DESCRIPTION</th>
<th>CLINICAL RESPONSES</th>
<th>IMMEDIATE MEDICATIONS</th>
<th>CONCURRENT MEDICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>No response</td>
<td>No change</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>B</td>
<td>Partial</td>
<td>Improvement</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>C</td>
<td>Good</td>
<td>Improvement</td>
<td>None</td>
<td>None or minimal</td>
</tr>
<tr>
<td>D</td>
<td>Excellent</td>
<td>Improvement</td>
<td>None or minimal</td>
<td>None or minimal</td>
</tr>
</tbody>
</table>

- The purpose of the present study was to evaluate clinical benefit of SLIT treatment in a larger, more diverse group of dogs with AD, in a multicentre, open-label, field study.

**OBJECTIVE**

- To evaluate clinical benefit of SLIT treatment in a larger, more diverse group of dogs with AD, in a multicentre, open-label, field study.

**FUNDING AND DISCLOSURES**

Treatment materials were provided by Allergychoices, Inc. M. Morris is an owner of Allergychoices, Inc. and has licensed to Heska Corporation the exclusive rights to manufacture and distribute the sublingual immunotherapy formulation described in this study, under the trade name AllergiKera Therapy Drops. D. DeBoer is currently a consultant for Heska Corporation, but was not during the time this study was conducted.