**Introdction**

Sublingual immunotherapy (SLIT) has been used in human medicine with good success for allergic rhinitis and asthma (1). More recently beneficial effects have also been reported for atopic dermatitis (2,3). An advantage of SLIT is the easy administration and tolerability. Limited studies exist in veterinary medicine. The purpose of the present study was to evaluate safety and efficacy of SLIT in an experimental model for canine AD.

**Materials and methods**

**Experimental design:** Double blinded, prospective, randomized, controlled.

**Animals:** Eighteen atopic Beagles, sensitized to dust mites (DM, *Dermatophagoides farinae*), timothy grass (TG) and ragweed (RW).

**Group allocation:** Dogs were randomly divided into control (n=6, vehicle) and active (n=12, 3 allergens) groups. Allergen challenge and scoring of clinical signs during challenge was done before and at the end of SLIT. Clinical signs (without challenge) were scored after 1, 2, 3, 4, 8 months and 2 months after stopping SLIT. Blood was drawn at baseline, 4, 8, and 12 months of SLIT and 2 months after stopping for allergen-specific IgE, IL-10, and TGF-beta. For clinical scores, ANOVA showed significant effect of time (end > beginning). One dog in each group worsened at the end of study. Improvements were as follows: in the controls 0 >80%, 1/6 61-80%, 2/6 41-60%, 2/6 21-40%, 0<20%; in the active group 0>80%, 1/12 61-80%, 7/12 41-80%, 2/12 21-40%, 0<20%. Overall the % of dogs that improved >40% was 50% in the control and 66% in the active group. For allergen-specific IgE a significant effect of time was found for DM (end > beginning), RG (end > beginning). For TGF-beta, significant effects of group (active > control) and time (end > beginning) were found for RW.

**Immunologic parameters:** 4 mls were used to measure allergen-specific IgE (Heska). 8mls were used for PBMC isolation, stimulation and measurement of IL-10 and TGF-beta1 using Elisa Assays (R&D Systems, Minneapolis, MN).

**Allergen challenge and assessment of clinical signs:** 50mg of crude allergens (mix of DM, RW, TG) were applied epicutaneously for 3 consecutive days. Clinical signs were scored using CADESI at baseline and at the end of SLIT.

**Results & Discussion**

ANOVA showed a significant decrease of CADESI scores at the end of the study. Only DM-specific IgE significantly decreased at the end of the study. For TGF-beta, a significant effect of group (active > control) and time (end > beginning) were found for RW. For IL-10, a significant effect of group (active > control) and time (end > beginning) were found also for RW. In summary, SLIT was safe, easy to administer and well tolerated by the majority of dogs. Some of the dogs in this trial that majorly improved with SLIT were dogs that had several years history of severe allergies thus this form of immunotherapy seems very promising and very safe.

**References**