**Dogs & Cancer Vaccines**

Cancer vaccines are conceptually appealing because of ease of administration, direct targeting of tumor growth pathways, and ability to treat cancer where it develops or metastasizes. Although the Oncept (oncept.net) intradermal vaccine against canine melanoma has been used in moderate numbers, large-scale development of immunotherapy in human and veterinary medicine has been difficult. Oncept, a xenogenic plasmid DNA vaccine encoding human tyrosinase, uses a high-pressure needleless device for intradermal delivery. It is believed, though no data exists to support it, that the vaccine exerts its therapeutic effects via development of cell-mediated immune responses against tyrosinase. A novel method of plasmid DNA delivery is electro-gene-transfer (EGT). With the patient under general anesthesia, EGT uses electrical pulses to introduce DNA and RNA directly into cell nuclei, which results in greater DNA cell uptake, enhanced protein expression, and long-term immune responses. DNA vaccine immunogenicity can be enhanced through RNA manipulation to improve transduction, addition of tumor antigen sequences, and upregulation of existing immune pathways. The authors have also used adenoviral vectors to introduce gene therapy against telomerase reverse transcriptase (TERT), which is unregulated in many malignancies, and the authors have shown a strong immune response and increased overall survival of dogs with B-cell lymphoma using a genetic vaccine targeting TERT using adenoviral DNA-EGT technology. Because of their genetic diversity and similar response to therapies, dogs can serve as models for human oncological therapies and new areas of research may be opened for human and companion animal cancer therapy.

**Commentary**

The Oncept and University of Wisconsin melanoma transdermal vaccines have provided initial forays into the arena of cancer vaccination. However, use of these vaccines has been modest. In this paper, the authors propose to develop electro-gene-transfer oncologic vaccines. EGT requires anesthesia but may allow for efficient insertion of genetic information into target cells. This method holds promise for inciting effective immune responses. Like any new cancer therapy, significant clinical trials will be needed to go from concept to clinic. The manipulation of genes to harness the immune system is part of the new future beyond cytotoxic chemotherapy. Stay tuned for more advances in this area.—Ewan Wolff, DVM, PhD

**Source**


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**Scratching that Itch: Oclacitinib for Pruritus**

Pruritus is the most common clinical sign associated with allergic skin disease. Glucocorticoids are commonly used to provide relief of pruritus. Oclacitinib, a Janus kinase inhibitor, has been shown to control/treat pruritus in allergic dogs. The safety and efficacy of oclacitinib was compared to prednisone in a randomized study involving 123 pet dogs diagnosed with allergic skin disease and moderate to severe pruritus. Dogs were prescribed either oclacitinib (0.4–0.6 mg/kg PO q12h for 14 days, then q24h) or prednisolone (0.5–1.0 mg/kg q24h for 6 ± 1 days, followed by q48h) for a total of 28 days of treatment. Owners monitored the dogs’ responses twice on day 0 using a visual analog scale (VAS), then on days 1, 6, 14, and 28; veterinarians used a dermatitis visual analogue scale (VAS) to assess response to therapy on days 0, 6, 14, and 28. Pruritus scores in treatment groups rapidly decreased within 4 hours posttreatment on day 0. Based on veterinary dermatitis VAS assessments, the peak pruritus decrease in the oclacitinib group occurred at day 14 (71.0% reduction from baseline); by day 28 pruritus reduction was 64.3%. In the prednisone group, the peak decrease occurred on day 6 with a 54% reduction from baseline; thereafter, decreases in this group were 53.7% at 14 days and 53.8% on day 28. The mean difference in pruritus was only significant at day 14. Both drugs were well tolerated by dogs. Sponsored by Zoetis.

**Global Commentary**

This is an interesting article, not only because it is focused on the treatment of the most common skin problem in dogs (ie, pruritus of allergic base) but also for being a randomized controlled trial, which is the ideal type of study to demonstrate the effectiveness (or not) of a pharmacological intervention. The results are valid1; however, critically reading the article allows some clinically useful considerations. It is possible that the efficacy of prednisolone at 14 days was undervalued because the induction period was short (6 days) and the exact dose (0.5–1 mg/kg) given (and to which proportion of patients) was unknown. Furthermore, although adverse effects were similar between the two treatments, we must consider that the study did not assess the effects of chronic treatment.—Laura Ordeix, DVM, MSc, DECVD

**Source**


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