

## **Characterising the Immunomodulation Induced by “Standard of Care” Cancer Treatments in Dogs**

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The core pillars of cancer treatment in veterinary medicine are still surgery, chemotherapy and radiation therapy. However, advancements in immunomodulating treatments for veterinary cancers are underway and are likely to mirror the innovations that have revolutionised human cancer treatment. Understanding how our current “standard of care” treatments impact the immune systems of cancer-bearing dogs will help to establish optimal multimodal protocols. The work outlined in this presentation will summarize data from two studies by our group that aim to improve our knowledge of the effect of chemotherapy and radiation therapy on immune cell subsets.

The first study included 16 dogs with treatment-naïve high-grade lymphoma. Peripheral blood was collected before, and 7 days after a single standard dose of vincristine chemotherapy. Flow cytometry evaluating T lymphocyte and myeloid cell subsets was performed. Immune subsets before and after treatment were then compared and evaluated for the presence of a correlation with response to treatment.

The second study included 11 dogs with nasal tumours treated with stereotactic radiation therapy (3 x 10 Gy). Peripheral blood and mandibular lymph node aspirates were performed before, and 7 and 16 days after the first fraction. T lymphocyte and myeloid cell subsets within peripheral blood and lymph nodes were evaluated with flow cytometry and compared between timepoints.

This presentation will highlight some of the key findings from this work and the potential implications of these data on multimodal approaches to cancer treatment in veterinary medicine.