



Dear Mr. and Mrs. Michael Harris,

It is my pleasure to provide a FY24 summary report for the Miso Harris Fund for Canine Cancer Research.

Prior to being awarded funding by the Miso Harris Fund, research project proposals are reviewed and approved by members of the Comprehensive Cancer Care (CCC) clinical team including: Pascale Salah (CCC section head), Ester Yang, Matthew Atherton, and Jennifer Lenz. This past year, the Miso Harris Fund has been used to support several studies evaluating various types of cancer in dogs:

1. Renal carcinoma: The first study supported by the fund is particularly special since it includes Miso's tumor. This is the first published study to characterize the immune landscape of the tumor microenvironment in canine renal cell carcinoma. We found that, overall, renal carcinoma tumors in dogs have low numbers of tumor-infiltrating lymphocytes. Interestingly, however, increased numbers of regulatory T cells (capable of suppressing the immune system) was associated with poor patient outcomes, similar to what has been found in human renal carcinoma. This study is now published in *Veterinary Immunology and Immunopathology*.

2. T cell lymphoma: With the support of the Miso Harris Fund, this clinical trial completed enrollment in July 2024! Lymphoma is the most common blood cancer in humans and dogs. Two main types of lymphocytes can develop into lymphoma: B lymphocytes (B cells) and T lymphocytes (T cells). The current standard of care for first-line treatment of lymphoma is chemotherapy, comprising a combination of vincristine, cyclophosphamide, doxorubicin, and prednisone (CHOP). Several studies have demonstrated T cell lymphoma is associated with a poorer outcome compared to B cell when treated with CHOP, and most dogs with T cell lymphoma die within 8 months. We predict that an alternative chemotherapy protocol combining lomustine, vincristine, procarbazine, and prednisone (LOPP) will prolong survival. To compare the effectiveness and safety of these treatments for T cell lymphoma, two separate groups of dogs were treated with LOPP or CHOP. Furthering our knowledge of this devastating condition in man and man's best friend will pave the way for future treatments of this challenging disease. Several patients enrolled in this trial are still alive and we will continue to follow their outcome. Therefore, even though enrollment has completed, it will likely not be published for another year or so.

3. B cell lymphoma: The Comprehensive Cancer Care (CCC) service treats approximately 50 new cases of lymphoma with chemotherapy per year. The Miso Harris fund supported collecting and storing cancer cells and blood from these patients, creating a biobank to further study the biology of canine lymphoma. We plan to evaluate the genetic signature of the cancer cells and markers of inflammation in the blood to better understand how the immune system impacts treatment response and patient outcome. This study is ongoing.

Additionally, as part of the requirement for board certification, every medical oncology resident is required to conduct a research project. Therefore, by supporting this research project, the Miso Harris Fund has also supported our residency program. Another huge contribution to the future of veterinary oncology!

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