Investigation of a novel modified fixed dose determination protocol for radioiodine treatment of feline hyperthyroidism

Purpose

To determine the optimal dosage of radioactive iodine for the treatment of hyperthyroidism in cats

Background

Radioactive iodine has been shown to be an effective treatment for cats with hyperthyroidism. Often, cats being treated for hyperthyroidism are given a standardized dose of radioactive iodine without regard for the severity of disease. However, current data shows approximately 30% of cats treated with radioiodine develop hypothyroidism when treated using the standard fixed dose method. Due to the association of hypothyroidism with the development or worsening of kidney disease, a novel radioiodine dose determination method is being investigated. For this study, doses will be determined on a case-by-case basis, using measurements of your cat’s thyroid gland. We believe this will make the dosing more accurate and reduce the frequency of common side effects like kidney disease and hypothyroidism. We have been using this dosing method for over one year and have noted a decrease in post-treatment hypothyroidism.

Eligibility

- Cats with hyperthyroidism who display appropriate clinical signs and have elevated serum total T4 concentration
- Cats whose owners have elected to treat their condition using radioactive iodine treatment

Exclusion Criteria

- Concurrent illness such as kidney disease or cancer

Study Design

Enrolled cats will be admitted to the hospital to undergo radioactive iodine treatment according to standard administration procedures. Our current protocol involves evaluation of the cat on a Thursday, where it will undergo a physical examination, routine blood and urine testing, and blood pressure. Provided these test results confirm the diagnosis of hyperthyroidism and do not identify other significant illness, the cat will be enrolled in the study and admitted for treatment. The following day, the cat will be sedated for thyroid scintigraphy (measurement). The cat then undergoes treatment with radioactive iodine on Monday. The anticipated release day is the following Friday, with a total hospitalization time of 8 nights. Cats will be isolated and owners will not be able to visit after the day of presentation because of regulations associated with use of radioactive material.

For this study, several follow-up tests will be required. Follow up will occur at your referring veterinarian at 1, 3, and 6 months where a physical examination, bloodwork, and a urinalysis will be performed. We will cover the cost of laboratory services as long as samples are shipped to us for analysis.

Compensation

If your cat is enrolled in the study, a hospital account credit in the amount of $250 will be issued to offset expenses of radioiodine treatment and follow up. If cats develop hypothyroidism and signs of worsening kidney disease during the study, they will be supplemented with levothyroxine at owner expense.

Contact

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If your query is urgent, please call the Small Animal Hospital (540) 231-4621 and ask for the internal medicine doctor on duty.