



RADIOACTIVE IODINE TREATMENT FOR FELINE HYPERTHYROIDISM

Information for Veterinarians

Radioactive iodine (I-131) therapy is the gold standard therapy for cure of feline hyperthyroidism. A single treatment of subcutaneous I-131 cures 95% of cats. Following the subcutaneous injection, the patient is hospitalized in our nuclear medicine ward and monitored around the clock via closed-circuit cameras and twice-daily staff care for 4 days, until the levels of radiation emitted are below acceptable levels. Patients can remain hospitalized longer if circumstances dictate or at owner's request. All patients will be discharged with detailed written instructions, and a copy of these discharges will be faxed to the primary veterinarian.

Cats referred for I-131 therapy will have a referral appointment with Dr. Cassandra Brown, one of our board-certified small animal internal medicine specialists. During this one-hour appointment, Dr. Brown will review all medical records, examine the patient, and discuss the cat's condition with his or her owner. Radioactive iodine therapy procedures, post-treatment requirements, and follow-up will be explained in detail. Any additional testing recommended at that time can be pursued during that visit. The patient should NOT discontinue any treatments or diets prior to referral, unless medically necessary.

During the referral appointment, I-131 therapy will be scheduled for a later date, generally 7-10 days following referral. Cats will be discontinued from methimazole for 7-10 days prior to treatment. If a cat is being fed Hill's y/d diet, this will be discontinued at least 2 weeks prior to radioactive iodine therapy. Dr. Brown will provide instructions to the client as to when to stop therapies prior to returning for treatment.

Following treatment, the patients are referred back to the primary veterinarian's clinic for all follow up, unless follow-up with Dr. Brown is requested by the referring doctor. Generally, we recommend 1, 3, and 6 month rechecks to include physical examination, systemic blood pressure assessments, and lab work, at minimum, TT4, BUN, and creatinine. 85% of cats have a normal TT4 one month post-treatment, but a few take longer. 95% of cats have a normal TT4 three months post-therapy.

Preparing and Referring a Patient for I-131 Therapy

The patient should have a current (i.e., not more than 30 days old) laboratory profile performed, consisting of CBC, full chemistry panel, TT4, and UA. This panel MUST be run at a referral diagnostic laboratory (i.e., Antech or IDEXX). Systemic blood pressure assessment and three view thoracic radiographs are recommended. These tests can be performed at the referral visit, if necessary. The patient's initial TT4 or thyroid profile pre-treatment is also required.

A methimazole or Hill's y/d diet trial to attain euthyroidism is not strictly required for radioactive iodine therapy to be administered. However, these trials are often prudent, as predictive indicators for which cats will become azotemic following hyperthyroid treatment are lacking.

In general, all cats with suspect kidney disease (IRIS Stage II—creatinine >1.6 mg/dL or SDMA > 25 mcg/dL) referred for I-131 therapy should first be treated for at least four weeks with oral or transdermal methimazole or Hill's y/d diet to achieve a euthyroid state and reassess renal function.

If the cat has a heart murmur or gallop rhythm, or cardiomegaly is noted on radiographs, an echocardiogram by our cardiologist will be provided at a discounted price. This will ensure that these patients are stable and will be safe during the hospitalization period. The discovery of severe heart disease will change treatment recommendations.

Patients with significant disease not related to hyperthyroidism or requiring more than twice daily medications may not be good candidates for I-131 therapy. If there is a significant index of suspicion of thyroid carcinoma, I-131 may not be our initial recommendation. Feel free to call Dr. Brown to discuss questions you may have regarding a specific patient.

Unless the cat has clinical signs or laboratory work not compatible with uncomplicated hyperthyroidism, abdominal ultrasonography is not typically necessary or recommended.

Information for Cat Owners

Hyperthyroidism is a common hormonal disorder of middle-aged and older cats. The thyroid gland produces thyroid hormone, which is an important regulator of the body's metabolic rate. Almost all organs in the body are affected by thyroid hormone. In hyperthyroidism, excess amounts of thyroid hormone are secreted by the thyroid gland. The changes in the thyroid that result in this in cats are usually benign, although 1-2% of cats have malignant tumors causing this disease. If a malignant tumor is suspected, other treatment options, particularly surgical removal, may be preferred over radioactive iodine therapy. Your veterinarian can discuss this with you and can consult directly with Dr. Brown prior to your appointment, if necessary.

Clinical signs of hyperthyroidism include vomiting, diarrhea, increased thirst and urine production, increased appetite, and weight loss. Many cats develop heart murmurs or other cardiac changes, and some exhibit high blood pressure. Irritability and increased vocalizing are also sometimes reported.

Once your cat is diagnosed with hyperthyroidism, your veterinarian will discuss treatment options. Radioactive iodine therapy (I-131) is considered the gold standard treatment and cure for cats, and in some instances can be pursued once the diagnosis is confirmed. However, many cats that develop hyperthyroidism may have concomitant disease, and it is important to identify and treat these conditions as well.

Particularly, in cats with preexisting kidney disease or questionable kidney function, we usually recommend a trial period of either medication (oral or transdermal methimazole) or a severely iodine-restricted diet (Hill's y/d diet). It is important that your cat be treated with a reversible therapy such as these prior to pursuing definitive, irreversible treatment of hyperthyroidism with radioactive iodine. We generally recommend at least a four week trial, and verification that the treatment results in lowered thyroid levels and stable kidney values. In this way, we can ensure that your cat feels good with a normal thyroid level before initiating irreversible, definitive treatment.

Radioactive iodine (I-131) therapy is a safe and effective cure for most cases of hyperthyroidism. The thyroid gland is the only tissue in the body that utilizes iodine. Radioactive iodine, administered by a simple injection just under the skin, is concentrated by the overactive thyroid tissue. This destroys those overactive cells via radioactive decay. Any I-131 not absorbed by the thyroid is excreted in the urine in the next 1-3 days. Normal thyroid tissue is not affected by I-131, as it is inactive (atrophied) as a result of the other, hyperactive thyroid cells. This inactive tissue gradually regains function after the hyperactive tissue has been destroyed.

Most cats do very well with treatment. Rarely, a cat may seem sluggish or lethargic for 1-2 weeks as the thyroid levels normalize. A sore throat or trouble swallowing may occur transiently due to inflammation in the thyroid gland. Cats' thyroid function gradually returns to normal over 3-6 months. Less than 5% of cats will develop hypothyroidism, permanently low thyroid function. This unusual outcome is treatable with oral thyroid hormone supplementation. In the rare instance that I-131 treatment is ineffective, your cat will be retreated at no charge to you.

At your cat's referral appointment, you will have the opportunity to discuss any questions or concerns you may have about the treatment and post-treatment requirements with Dr. Brown.

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