

I131 at VCA-CAVES

The Preferred First Line Therapy for Hyperthyroid Cats

Referring Veterinarian Information and Work-up Instructions

Iodine 131 is now the standard of care for cats with hyperthyroidism. I131 has shown to dramatically increase the life expectancy of cats with hyperthyroidism.¹ The average life expectancy for methimazole therapy is 2 years where I131 is 4 years. I131 is 95% effective. Most of the patients who do not respond to a first treatment with I131 can be successfully treated for a second time.

Other therapies such as surgery and methimazole have potential side effects.

Surgery's disadvantages include:

- Anesthesia required
- Surgical procedure / tissue damage and healing
- High probability of recurrence (often requires additional I-131 treatment)
- Does not treat ectopic thyroid tissue
- Hypocalcemia from loss of parathyroid tissue

Methimazole disadvantages include:

- Patient must be "pilled" one to three times a day for the rest of his/her life.
- Cost can run from \$600-\$900 a year for medications and medical monitoring.
- Does not cure the disease.
- Side effects are common (approximately 18%)
 - Anorexia
 - Vomiting
 - Lethargy
 - Bleeding
 - Hepatopathy
 - Thrombocytopenia
 - Leukopenia

Ultra-low iodine diet (Hills y/d):

- Hills Prescription Diets make an ultra-low iodine diet that can lower the thyroid level to the normal range.
- The cat needs to eat 100% only the y/d diet.
- The thyroid tumor continues to grow though.
- Some cats will not eat the y/d diet. If you have multiple cats in the house, you are probably going to have to feed all the cats the y/d exclusively to prevent any iodine being introduced to the affected cat.
- We don't know the long-term effects of y/d on normal cats. y/d has not been tested long term (>5 years) on affected cats.
- y/d is an expensive food.

I131 is best suited as a first line therapy for stable patients without significant heart disease, GI disease, kidney disease, and liver disease. Dr. Dutton is happy to discuss your patient's particular medical condition.

Our program includes a pre-treatment exam, review of the diagnostic findings, the I131 treatment, hospitalization in our nuclear medicine ward and consultation with the referring veterinarian on the post-treatment T4 testing.

Diagnostic Testing Required:

1. CBC, biochemical profile (BUN, Cr, ALT, SAP, TP as a minimum), and urinalysis. These values should be within 60 days of admission.
2. T4 (or fT4) value within 30 days of admission.
3. If your patient has been on methimazole for more than 90 days, please discontinue the methimazole for at least seven days and perform a new T4 level.
4. Pets can continue Hills y/d diet if they are currently on it.
5. Lateral and DV (or VD) thoracic radiograph. You can send by e-mail to: i131nh@vca.com

Patient Admission Information.

1. Patients are admitted for therapy by appointment only.
2. Patients are hospitalized for approximately 5-6 days. Clients cannot visit patients during therapy, nor can patients be removed/discharged until officially released. Clients cannot terminate therapy early or arrange for early releases once therapy has begun. These are State and Federal regulations.
3. Clients can 'virtually' see their pets on our website at <http://www.I131nh.com>.
4. Clients can call in daily for update on their pet's condition.
5. In the unlikely case where the patient dies during their stay, we are required to hold the remains for approximately 90 days.

Payment Policy

1. The cost of the I131 therapy is \$1776.55². This must be prepaid before the therapy can begin. Unfortunately, due to costs involved, we are not able to bill or hold checks for this treatment. We accept cash, checks, VISA, MasterCard and Discover.
2. Not included in the price is the pre-treatment and post-treatment testing on the referring veterinarian's part. Additional costs can be expected for emergency medical testing, procedures or medications needed by the patient during their stay with us.

Dismissal Policy

1. Patients will be excreting a small amount of radiation upon dismissal. The clients are given strict dismissal instructions on handling pets for 2 weeks post-dismissal. If clients are unwilling or unable to follow these precautions, they should consider surgical or medical management.

Uncommonly Seen Side Effects

1. Hypothyroidism. A very small percentage of treated patients will have lifelong hypothyroidism. Most cases of hypothyroidism are transient and resolves within 4 months post-treatment.
2. Sore throat or dysphagia. This is usually transient, but a permanent voice change is possible.
3. Worsening of azotemia. Correction of the hyperthyroid state (by I131, methimazole, or surgery) reduces the hypermetabolic state which elevates the glomerular filtration rate (GFR). When the GFR returns toward normal, borderline azotemic patients can worsen. It has been estimated

that in the pre-treatment azotemic patients, less than 5% have a clinically significant worsening of the azotemia.

- a. There is currently no definitive test to determine whether this will happen to a particular azotemic patient. Some clinicians have recommended that pre-treatment azotemic patients be treated for 7 days with 2.5 mg methimazole PO BID and have their BUN and Creatinine rechecked in 7-10 days to see if the azotemia worsens.³
 - i) If the azotemia does not worsen, then the patient should not exhibit worsening azotemia after the I131 therapy.
 - ii) If the azotemia does worsen, it may be advisable for the patient to receive a low dose methimazole to help counteract the hyperthyroidism while at the same time keeping a slightly hypermetabolic state to improve GFR.

Post -i131 Recheck

1. You as the referring veterinarian performs the post-i131 testing.
2. Four to six weeks after the i131 therapy, please obtain a new thyroid level.
 - a. If you diagnosed hyperthyroidism based on a T4 value, repeat a T4.
 - b. If you diagnosed hyperthyroidism on a fT4 value, repeat a fT4 value.
3. Obtain a BUN and Creatinine. If you have the ability, a SDMA would be helpful but not necessary.

How you can interpret the post-131 values

T4 or fT4 (your lab may have different normal values)	Azotemia	Interpretation
T4 between 1.0 and 4.0 fT4 0.7-2.6 ng/dL (9.0-33.5 pmol/L)	None present	Pet is back to normal. Monitor T4 every 6 months.
T4 less than 1.0 (or fT4 < 0.7 ng/dl) but patient is clinically normal	None present	Monitor for clinical signs of hypothyroidism (significant weight gain, seborrhea, excessive listlessness.)
T4 less than 1.0 (or fT4 < 0.7 ng/dl) but pet is clinically showing signs of hypothyroidism	None Present	Start on levothyroxine 0.1 mg PO q24hr for 3 to 4 months and recheck.
T4 between 1.0 and 4.0 fT4 0.7-2.6 ng/dL (9.0-33.5 pmol/L)	Present	Treat for azotemia. Normal CRF protocols are appropriate. Monitor T4 every 6 months.
T4 less than 1.0 (or fT4 < 0.7 ng/dl) but clinically normal	Present	Treat for azotemia. Normal CRF protocols are appropriate. Monitor for clinical signs of hypothyroidism (significant weight gain, seborrhea, excessive listlessness.)
T4 less than 1.0 (or fT4 < 0.7 ng/dl) but clinically showing signs of hypothyroidism	Present	Treat for azotemia. Normal CRF protocols are appropriate. Start on levothyroxine 0.1 mg PO q24hr for 3 to 4 months and recheck.

If you can forward the post-therapy thyroid and BUN/Crt results to i131nh@vca.com for our records, it is appreciated.

Contact Information:

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¹ Milner JM et al. Survival times for cats with hyperthyroidism treated with iodine 131, methimazole, or both: 167 cases (1996-2003). JAVMA 2006 228:4, p 559-563.

² Price subject to change without notice.

³ Bruyette D. Update on Feline Hyperthyroidism. Northeast Veterinary Conference 2004.