

## Hyperthyroidism in Cats

### What is hyperthyroidism?

The thyroid is a two-lobed gland located in the neck that produces thyroid hormone.

Thyroid hormone is responsible for regulating many body functions including:

- Metabolism
- Body temperature
- Blood pressure
- Heart rate
- Gastrointestinal function.

In hyperthyroidism there is an excess of thyroid hormone that affects all body systems and causes them to be overactive.

Hyperthyroidism is the most common hormonal disorder of older cats. The reason that some cats develop hyperthyroidism is unknown. In the majority of hyperthyroid cats the abnormality of the thyroid gland is caused by a benign adenoma in one or both of the lobes of the thyroid gland. Approximately 3% of hyperthyroid cats have a cancerous thyroid tumor.

### What are the symptoms of hyperthyroidism?

The most common symptoms of hyperthyroidism include:

- Weight loss
- Increase in appetite
- Increased drinking
- Increased urination
- Increased activity level, restlessness or nervousness
- Vomiting
- Vocalization
- Unkempt haircoat

### How is hyperthyroidism diagnosed?

In most cases hyperthyroidism is relatively easy to diagnose. The condition is caused by an excess amount of thyroid hormone in the bloodstream and the diagnosis involves measuring the thyroid hormone or T4. In some cases, hyperthyroidism may be suspected but the thyroid hormone level is normal. In this situation the recommendation is generally to repeat the test at a later date.

### How is hyperthyroidism treated?

There are several treatment options available for hyperthyroidism and each has advantages and disadvantages. Oral medication and diet are two options that control the clinical signs of hyperthyroidism as long as the treatment is administered. Surgery and radioactive iodine are treatment options that are likely to result in a cure.

#### 1. Oral Medication

##### Methimazole

Methimazole is an oral medication that works by blocking the production of thyroid hormone. The drug is very effective however the effects are reversible if the drug is discontinued. Treatment of hyperthyroidism will decrease the blood supply to the kidneys which may “unmask” underlying kidney disease. Methimazole may be the treatment of choice in these cats because the dose can be tailored to minimize the effects on the kidneys.

The disadvantages of methimazole include the fact that some cats may be difficult to pill long-term. Mild reactions may be seen and include decreased appetite and vomiting. More severe side effects including bone marrow suppression, liver toxicity and severe facial itching may be seen. In addition, regular routine blood work is required long term.

## **2. Surgery**

Surgery can be used to remove the abnormal thyroid gland. Surgery is an effective option and has the potential to cure hyperthyroidism.

The disadvantages of surgery include the fact that hyperthyroid cats are often older and may have other underlying diseases such as heart conditions that may make anesthesia more challenging. In addition there is a risk of damaging nearby tissues (ie parathyroid gland). In addition, although unlikely, with surgery, recurrence may be possible.

## **3. Radioactive iodine.**

Iodine ingested in the diet is concentrated in the thyroid gland to make thyroid hormone.

Thyroid cells do not differentiate between dietary iodine and radioactive iodine. The treatment itself involves an injection of radioactive iodine under the skin. This injection is similar to a vaccine. The radioactive iodine is taken up the thyroid gland where it destroys hyperfunctional tissue. Radioactive iodine is currently considered the treatment of choice for hyperthyroidism.

The advantages of this treatment include the following:

- Simple, effective, safe
- Unlike surgery, there is no need for anesthesia
- Unlike surgery, there is no risk of damaging nearby tissue and causing hypoparathyroidism
- Radioactive iodine concentrates in and destroys hyperactive thyroid tissue regardless of location
- No long term medication is required

The disadvantages of this treatment include:

- Patients requires hospitalization for approximately 7 days until their radiation levels decrease to a certain level.
- ~5% cats will not respond to a single treatment and may require additional treatments however most of these cats will respond to their second treatment
- While hospitalized, treated cats can only have minimal handling due to their radiation levels. As a result, cats with significant concurrent health conditions may not be considered ideal candidates for this treatment.
- Certain precautions are required with litter disposal and contact for a short time after cats are discharged. These are discussed with families in detail at the time of discharge.

## **4. Nutritional Management**

A new diet has been developed for the management of hyperthyroidism. The diet is iodine restricted because the function of dietary iodine is the synthesis of thyroid hormone. Studies have shown that 90% of hyperthyroid cats with have a thyroid hormone level in the normal range within 4 to 12 weeks of initiating nutritional management. The disadvantage of dietary management is that it is only effective if the cat eats only this diet. In addition, certain medications and supplements contain may need to be discontinued depending on their iodine levels.

### **I have a pet/patient with hyperthyroidism and I am considering radioactive iodine treatment. What do I do now?**

If you are a cat owner and suspect that your cat has hyperthyroidism please contact your family veterinarian for an initial assessment. Your veterinarian can contact us to help determine if radioactive iodine is the best treatment choice for your cat and arrange a referral for treatment.

Contact Information:

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