

Hyperthyroidism in Cats

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What is Hyperthyroidism?

The thyroid is a two-lobed gland located in the neck region. One lobe of the thyroid gland is located on each side of the trachea (windpipe). The thyroid gland produces thyroid hormone, a substance that is transported to every cell in the body via the blood stream. The primary function of thyroid hormone is to enhance the rate at which cells function; too much hormone makes the cells work very fast while too little causes the cells to slow down.

Hyperthyroidism defines excess thyroid hormone production. It is rare in dogs but is one of the most common diseases diagnosed in cats 7 years of age and older.

Clinical signs for hyperthyroidism vary among affected cats. Among the most common signs seen by owners is weight loss, increased appetite, patchy hair loss, failure to groom, increases in water intake and urine output and restlessness or nervousness. Vomiting and diarrhea are also common. Rarely seen are signs of panting, loss of appetite, listlessness or seeking cool places to rest.

Diagnosis

To diagnose hyperthyroidism blood tests of thyroid activity are necessary. Most hyperthyroid cats will reveal an elevated thyroid hormone (T4) in their blood stream. However a small percentage of cats do not have a "diagnostic" elevation in their blood T4 level. In these instances follow up testing or additional assessment of thyroid function is indicated.

Treatment

Three different treatments are available for managing hyperthyroidism in cats. Hyperthyroid cats that are not treated tend to become increasingly ill, whereas treatment will usually restore a patient's health.

One treatment option involves the use of an oral medication called methimazole (Tapazole[®]). Methimazole works by reducing the thyroid gland's ability to produce T4. This medication is readily available and relatively inexpensive. The major disadvantage to methimazole is that it must be used lifelong. Moreover it may also cause vomiting, loss of appetite, liver damage, decreases in white and red blood cells and platelets idiosyncratically. Full blood work is necessary within one week of the introduction of methimazole to ensure that the liver and bone marrow are tolerant to the drug. Finally serial reassessment of thyroid function is requisite to confirm the methimazole dose is controlling the hyperthyroidism (usually every three months).

Methimazole, if tolerated, is often recommended in patients with concurrent chronic renal (kidney) insufficiency.

Another treatment option which is no longer recommended is surgical removal of the abnormal thyroid gland(s). Although surgery does resolve the hyperthyroidism quickly, it does require anesthesia and hospitalization. Yet some hyperthyroid cats are at increased anesthetic risk. Rarely parathyroid glands may be accidentally removed during thyroidectomy; a surgical consequence that results in hypocalcaemia (low blood calcium) and lifelong calcium supplementation. Finally surgical correction of thyroid hyperactivity may be detrimental to the patient's kidney health. Rapid reduction in thyroid activity alters renal (kidney) blood flow. In patients with concurrent renal disease this rapid change in blood flow may aggravate the renal disease.

The third and generally best treatment option employs the administration of radioactive iodine (I131). Iodine is the primary building block of thyroid hormone. Iodine is absorbed readily by thyroid gland cells whether the iodine is radioactive or not. Radioactive iodine is taken up by thyroid cells (preferentially gathering in abnormal thyroid cells), irradiates these abnormal cells and destroys them.

Disadvantages of I131 therapy are few. Patients in receipt of I131 must remain in hospital until their radioactivity drops below a specified threshold. Visitation during this hospital stay is not permitted because of state or federal mandates. This obligate hospital stay is generally 5 to 7 days. Furthermore some cats treated with I131 may become irreversibly hypothyroid; an eventuality that requires lifelong thyroid hormone replacement therapy. Finally a small percentage of patients that undergo radioactive iodine therapy may develop overt renal disease.

