Feline hyperthyroidism treatment

Laura Garrett, Alison Moores and Hattie Syme

Hyperthyroidism is the most commonly recognised endocrinopathy in cats. While the factors that contribute to the development of hyperthyroidism in cats are poorly defined, much is known about the pathophysiological changes that occur in patients secondarily to the disease, the testing used to provide a diagnosis and the available treatment options. In this multidisciplinary grand rounds session, the speakers will briefly summarise the clinical signs of and testing for hyperthyroidism, and then will present detailed case-based information regarding the pros and cons of the three most widely used therapies: medical, surgical and radioactive iodine.

KEY LEARNING OBJECTIVES

- Understand how hyperthyroidism and post-treatment hypothyroidism affect renal function
- Know the most common toxicities of methimazole and carbimazole therapy
- Know the pros and cons of medical, surgical and radioiodine therapy

MULTIPLE CHOICE QUESTIONS

1. Which one of the following diseases may be unmasked following resolution of hyperthyroidism?
 - a. Diabetes mellitus
 - b. Cholangiohepatitis
 - c. Chronic kidney disease
 - d. Hypertrophic cardiomyopathy
2. Short-term costs are low for which form of therapy for hyperthyroidism?
 - a. Methimazole
 - b. Surgical excision
 - c. Radioactive iodine
 - d. External beam radiation therapy
3. Recurrent laryngeal nerve damage may be seen with which of the following treatment options for hyperthyroidism?
 - a. Methimazole
 - b. Surgical excision
 - c. Radioactive iodine
 - d. External beam radiation therapy
4. Which of the following endocrine test results, in conjunction with low total T4 concentration, would be most consistent with a diagnosis of iatrogenic hypothyroidism following radioactive iodine therapy?
 - a. Normal free T4
 - b. High total T3
 - c. Low thyrotropin-releasing hormone (TRH)
 - d. High thyroid-stimulating hormone (TSH)
5. Which of the following is NOT a recognised side effect of methimazole/carbimazole therapy?
 - a. Thrombocytopenia
 - b. Facial excoriation
 - c. Vomiting
 - d. Haemorrhagic cystitis

The collapsing patient

Sonya Gordon, Lynelle Johnson and Holger Volk

Collapse in the small animal patient can be caused by diseases affecting many different body systems, including cardiopulmonary disorders, neurological diseases, musculoskeletal and systemic diseases. When an animal presents in the clinic with a history of collapse, episodic weakness or fatigability, appropriately defining the presenting complaint, also known as the problem, is essential to initiate the correct diagnostic pathway. An owner reporting that their pet had a collapsing episode is rather non-specific, and the clinician needs to take an appropriate history to define the problem further by gathering key information, including:

- What happens before or after the episode?
- What was observed during the episode?
- Does the animal lose consciousness during the episode?
- What was the muscle tone during an episode?

This will enable the clinician to ascertain whether:

- The episode is precipitated by exercise or excitement (indicating a possible cardiopulmonary disorder)
- The animal loses consciousness (indicating syncope or seizures)
- There is no evidence of convulsive activity (more likely syncope than seizures)
- The animal is normal in between the episodes (episodically weak), whether weakness is precipitated by exercise (fatigability) or the animal is consistently weak (persistently weak)
- The animal shows a spastic or flaccid 'weakness' associated with or without incoordination (ataxia)
- Abnormal behaviour prior to and following collapse raises suspicion for neurological disease, while rapid recovery is more consistent with a cardiopulmonary cause

Your initial defined problem can then be refined by your physical examination findings, e.g. when cardiac arrhythmia or congestive heart failure is the cause of collapse, physical examination features can be helpful in determining the underlying disease process; however, specific findings are often absent in animals affected by pulmonary hypertension

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or thromboembolic disease. A minimum database (complete blood count (CBC), chemistry panel and urinalysis) is typically indicated, along with advanced imaging to identify the underlying aetiology and to determine prognosis and appropriate therapy.

KEY LEARNING OBJECTIVES

- Construct a list of differential diagnoses for the patient with collapse
- Identify physical examination features that differentiate between cardiac, neurological, metabolic, haematological and respiratory causes of collapse
- Prioritise the diagnostic workup in a patient presented for collapse

MULTIPLE CHOICE QUESTIONS

1. Which of the following diseases is least likely to be associated with pulmonary hypertension?
 - a. Left-sided congestive heart failure
 - b. Infectious bronchitis
 - c. Pulmonary thromboembolism
 - d. Idiopathic pulmonary fibrosis
2. What medication has been shown to improve quality of life in dogs with pulmonary hypertension?
 - a. Theophylline
 - b. Lasix
 - c. Sildenafil
 - d. Terbutaline
3. A dog showing signs of aggression just prior to its 'collapse' is most likely to have suffered which of the following?
 - a. Syncope
 - b. Seizure
 - c. Paroxysmal dyskinesia
 - d. Narcolepsy
4. A 4-year-old, 3 kg mixed breed dog is presented for 'episodes' that after discussion with the owner appear to be most consistent with seizures. The physical examination is unremarkable. A chemistry and CBC and urinalysis are performed and the results are within normal limits with the exception of an elevated packed cell volume (PCV)/haematocrit (PCV = 68%). Which of the following is the next most appropriate test to recommend?
 - a. Thoracic radiographs
 - b. Bone marrow aspirate
 - c. Cranial magnetic resonance imaging (MRI)
 - d. Echocardiogram
5. A 7-year-old Boxer dog is presented for a 2-month duration of four episodes of syncope that occur with exercise. The physical examination reveals a grade 2/6 left base systolic murmur. The pulses are normal in amplitude and synchronous with a rate of 130 per minute. The auscultated cardiac rhythm is regularly irregular. The remaining physical examination is unremarkable. If the client will allow you to perform one diagnostic test, which do you recommend?
 - a. Echocardiogram
 - b. Cranial MRI
 - c. 6-lead resting electrocardiogram (ECG)
 - d. 24-hour ambulatory ECG

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