Avacta Animal Health Update: Feline Asthma

Feline asthma is a common inflammatory disease of the lower airway affecting approximately 1-5% of the cat population and is believed to be triggered by aeroallergens\(^1,2\). The median age of presentation is at 4-5 years of age although, it is thought many cats presenting at this time will already have a long-term history of the disease, so the actual age of onset could well be significantly younger\(^2\).

Clinical signs are variable and are sometimes categorised as acute, where episodic severe respiratory distress on expiration is seen, or as chronic, where more persistent wheezing and coughing of various degrees of severity may be observed\(^1\). However, approximately 10-15% of cases will present with a history of vomiting or paroxysmal hacking and coughing. This may result in a diagnostic work-up for gastrointestinal conditions such as hairballs, rather than one for respiratory issues\(^2\).

Some cats with a history suggestive of asthma may be asymptomatic at the time of presentation. In these patients gentle tracheal palpation will often easily elicit a cough\(^2\). The subtly of clinical signs in some cats with chronic disease means the condition can remain undiagnosed for a significant period of time. This delay allows progression of pathological changes within the lung tissue\(^2\).

Even with a thorough diagnostic respiratory investigation, discriminating feline asthma from other lower airway disorders (including chronic bronchitis and parasitic, infectious, cardiac or neoplastic conditions) is difficult which is, at least in part, why there are relatively few clinical trials into therapeutics for the disease\(^1-3\). Diagnosis is usually through a combination of history, clinical signs, thoracic radiography, exclusion of respiratory parasites, bronchoalveolar lavage cytology and response to trial therapy with bronchodilators and glucocorticoids\(^1\). Once a diagnosis has been made, allergy testing can then be used to identify allergens to which the cat is showing a hypersensitivity response\(^2\). These are then interpreted alongside the history to establish their clinical relevance. Intra-dermal skin testing and allergen-specific IgE determination by ELISA were both found to specific in a study by Lee-Fowler et al. (2009), with the conclusion being drawn that either test could be used to guide the selection of allergens in allergen-specific immunotherapy (ASIT)\(^4\).

Treatments which are typically used include oral, parenteral and/or inhaled steroids and bronchodilators. Lung function may still decline over time as these therapies are palliative in nature and do not ameliorate chronic airway remodelling\(^4\). While effective in many cats some cases will be minimally or unresponsive to the drugs, furthermore, the long-term use of steroids is contraindicated for various common feline conditions (diabetes for example) and are not always well tolerated\(^2\).
Therefore, it is advantageous to consider other treatment modalities as part of the solution for this lifelong condition. When allergen identification has occurred it opens up two additional possibilities: allergen avoidance through environmental changes and allergen-specific immunotherapy (ASIT) which has been shown to be a successful treatment option for some cats.6