

## Equine Asthma

Equine asthma (formerly known as COPD/RAO)

occurs when inhaled allergens initiate a cycle of bronchospasm (airway constriction) and airway inflammation (increased inflammatory cells and mucous). Two forms commonly occur- summer asthma secondary to pollen and the more 'renowned' form triggered by dust which can occur throughout the year.

Horses typically present with an increased breathing rate and effort as well as a cough. Clinical signs vary in severity from those patients that present with a history of poor performance or a mildly increased respiratory rate to those severely affected presenting in respiratory distress. Diagnosis is often based on the presence of compatible clinical signs but is confirmed following respiratory tract endoscopy and submission of bronchoalveolar lavage and tracheal wash samples to the lab for cytological evaluation. These samples are also submitted for culture to rule in/out bacterial involvement (and in turn the need for concurrent antibiotic treatment).

Ascertaining the actual trigger for an asthma episode can be challenging. Dust can play a significant role so minimising dust in the patient's environment is of paramount importance. Utilisation of 'dust free' bedding (paper/cardboard) should be considered and cobwebs should be hoovered from stables quarterly. Grooming should take place outside to minimise stable dust. Investment in a hay steamer should be considered.

Managing Summer asthma relies heavily on drug therapy. Allergy testing is possible in horses (intradermal skin testing or allergy bloods) but results are often unrewarding.

Drug therapy is based on relieving bronchospasm/airway constriction through the use of bronchodilators and on relieving airway inflammation through the use of steroidal anti-inflammatory drugs. Drugs may also be administered to break up mucous (mucolytics). Airway inflammation is slow to resolve and treatment may be required for a period of months. In some cases, if ongoing allergen exposure is present, treatment may be required on an ongoing basis or repeatedly when flare-ups occur.

Oral therapy is still considered 'gold' standard drug therapy. This is facilitated through use of clenbuterol which opens up the airway and relieves airway spasm & steroidal anti-inflammatories to reduce airway inflammation. Mucolytics, which break up airway mucous, may also be added to food. Some authors advocate eucalyptus as a mucolytic.

In some patients, oral therapy is not effective, which means we need to explore other 'drug delivery methods' such as nebulisation or inhalation.

Both bronchodilator and steroid drugs may be delivered

through a nebuliser. The initial investment is high but long term, the drugs will work out less expensive than oral therapy.

Alternatively, human asthma inhalers may be used through a paediatric face mask. This is relatively cost effective but inhalers require very frequent administration and drug delivery may be prohibited by airway mucous.