

Equine Newsletter

A Breath of Fresh Air:

Thoughts about Equine Asthma

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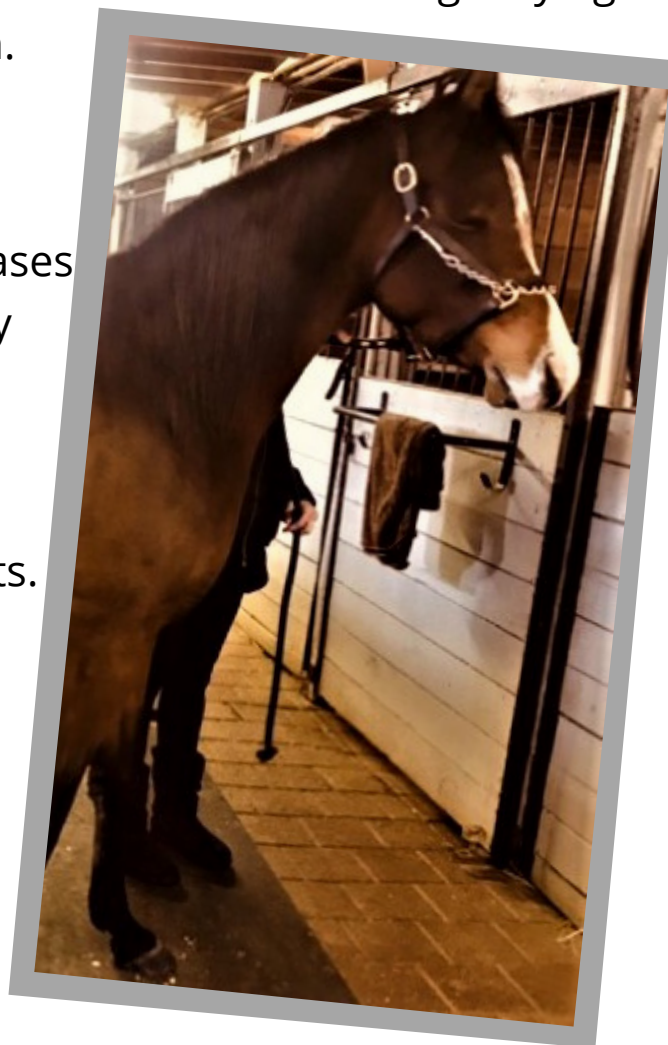


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Cough is one of the most frequent presenting complaints that the veterinarians of Central Ontario Veterinary Services are faced with on our rounds, and allergic airway conditions are responsible for most of the cases we see. As we head into the winter, many performance horses will be spending more time in their stables with increased exposure to barn dusts, other airborne particles, and noxious gases. Horses that live outside for the winter may be fed free choice hay from large round bales containing varying levels of organic dust, moulds, and endotoxin.

Equine Asthma is a term now being used to describe the spectrum of allergic airway diseases in horses that ranges from horses with simply an irritating cough to those with the severe breathing difficulty known as heaves. Many cases fall somewhere in between, and all are caused by inhaled allergens and other irritants.

A warm stable is a great place to groom and tack up, but air quality may suffer from humidity and airborne allergens unless there is sufficient air exchange through natural or mechanical ventilation.



How do we diagnose the cause of cough in a horse?

When trying to help a coughing horse, veterinarians must decide whether they are dealing with Equine Asthma, or with a bacterial or viral infection.

This distinction is important because it determines what drugs can be used and what environmental changes can be helpful. The history of the condition can give helpful clues, as can physical examination, and in some cases, white blood cell counts.

Often the results of these tests are unremarkable or inconclusive. In these cases, we recommend performing an endoscopic examination and bronchoalveolar lavage. We use a 6m endoscope to examine the network of airways that lead to and through the horse's lung. Bronchoscopy is not a painful procedure, but it does stimulate coughing at certain stages of the examination, and most horses do not enjoy having a tube pushed through their nostril.

To relieve this discomfort and to reduce anxiety, we perform the procedure under standing sedation. Local anaesthetic solution is flushed through the endoscope to reduce sensation in the most reactive parts of the airways.

From the nostril, the lubricated endoscope is passed through the upper airways including the nasal passages, the pharynx (throat), the larynx (voicebox), and the trachea (windpipe). The trachea runs from the larynx in the throat region down the horse's neck and into the chest. Here, the trachea divides into two bronchi, one leading into each lung. The bronchi branch into smaller and smaller airways, eventually ending in microscopic air sacs called alveoli. The endoscope is advanced as far as it will go, and sterile fluid is flushed through the endoscope to fill the small airways and alveoli beyond its reach. This fluid washes the small airways and alveoli, picking up inflammatory cells, bacteria, and debris that will be examined under a microscope and submitted for bacterial culture. This fluid is sucked back through the endoscope and placed in sterile containers for shipment to a laboratory.

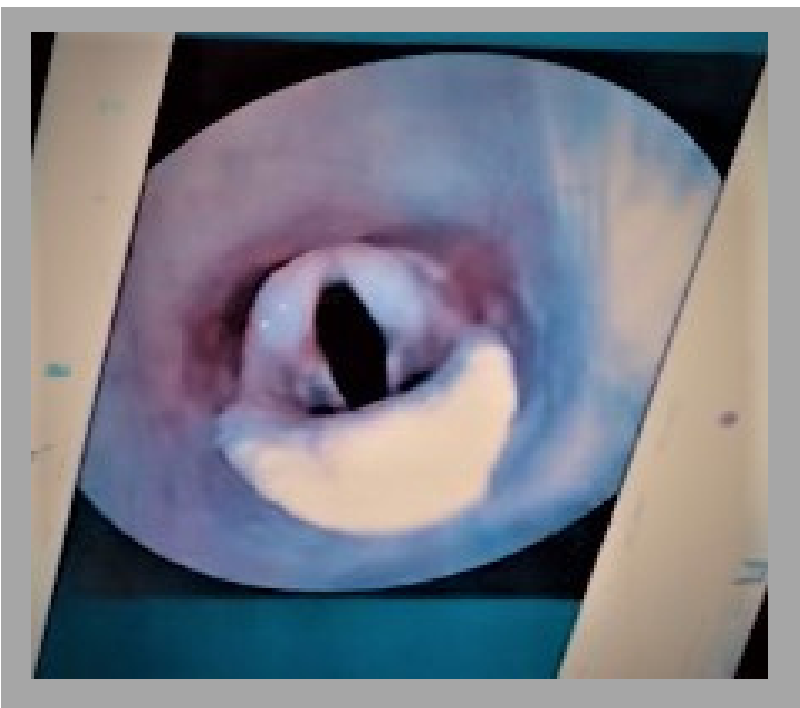


An endoscopic exam with bronchoalveolar lavage is a truly thorough examination of the respiratory tract. In addition to collecting samples, we can see sites from where mucus is draining, recognise any abnormalities in the structure of the airways, and identify abnormalities such as paralysis of the larynx, tumours, abscesses, and inhaled foreign objects.



Dr Stoddart passes the endoscope through the nostril of a sedated patient

Horses with active Equine Asthma have mucus and increased numbers of various inflammatory cells. The type and characteristics of these cells help us to reach a diagnosis and to decide what treatment is likely to be most effective. Bacterial infections are treated with antibiotics; viral infections require supportive treatment, but management of Equine Asthma can be more complicated.



A view of the larynx through the endoscope. The epiglottis is the triangular structure to the left; the vocal folds are flaps on either side of the dark opening into the larynx.



What treatments are available for Equine Asthma?

The most important treatment is to reduce exposure to the environmental trigger, but this is often the most difficult to treatment to apply. Many horses react to allergens and other airborne particles that are very common and difficult to eliminate from a horse's environment. Trial and error can help to determine which factors should be addressed. During winter, most horses with Equine Asthma do better housed outside with access to run-in sheds for protection from wind and rain. Nevertheless, attention must still be paid to the quality of hay they are fed and to preventing them from burying their faces in the hay bale while eating.

Helpful methods can include:

- Shaking hay out and feeding it on the ground, because eating with the head lowered aids in clearance of allergens from the airways.
- Soaking hay in water before feeding can help to keep dust down, although this may not be practical in freezing conditions.
- Covering large round bales with a slow feeding hay net.
- Feeding hay in a feeder designed to prevent the horse from burying its nose in the hay.
- Hay steaming devices have been used and may be helpful at reducing mould content, but conclusive evidence is lacking.



Although environmental management is critical for horses with Equine Asthma, medical treatment is frequently required to improve quality of life while we wait for environmental changes to take effect. Some horses require long-term medical treatment in the face of unrecognised or unalterable environmental factors.

This mare enjoys plenty of fresh air at this time of year, but do her hay feeding arrangements prevent her from inhaling allergens while she eats?

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Medical treatments for Equine Asthma are used to reduce the inflammatory reaction in the lungs, to relieve bronchoconstriction that causes airway obstruction, and to increase clearance of mucus from the lungs. The most effective anti-inflammatory drugs are corticosteroids, which may be administered by mouth, by injection, or by inhalation.

Bronchodilators can be administered by mouth or by inhalation but are considered short-term or secondary treatments in addition to corticosteroids. Antihistamines can be effective in some cases and are administered by mouth. Corticosteroids, such as fluticasone, dexamethasone, isoflupredone, and prednisolone, work by depressing inflammatory reactions. Because these drugs also have a range of undesirable effects including increased susceptibility to infections, delayed wound healing, weakening of ligaments, suppression of the adrenal gland, and (rarely, if ever) laminitis, we try to use these drugs at the lowest effective dose and for the shortest duration possible.

By keeping this in mind, we rarely see any undesirable effects. Treatment schedules start at a higher dose initially with the dose tapered gradually over 3 or 4 weeks until the horse either no longer needs medication or is receiving the lowest effective dose every 2 to 3 days. Inhaled corticosteroids are used at lower doses because the drug is delivered directly to the lungs, which means that the chance of adverse effects is low. The size and length of the horse's airways mean that a horse needs many more puffs from the inhaler than a person with asthma would use.

Special delivery devices such as the Equine Aeromask and the EquiHaler are used with a vaporisation chamber to ensure that as much drug as possible actually reaches the lungs.



For more information about Equine Asthma, please give us a ring to speak to a veterinarian.

Accurate diagnosis of the cause of a cough can lead to effective treatment.

Please contact us on 705-722-3232

or by email to info@centralontariovet.com

to let us know how we can help your coughing horse this winter.



*Giving inhaled medication using the
Equine Aeromask*



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