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YOUR GUIDE TO EQUINE HEALTH CARE

FACTSHEET

EQUINE ASTHMA SYNDROME

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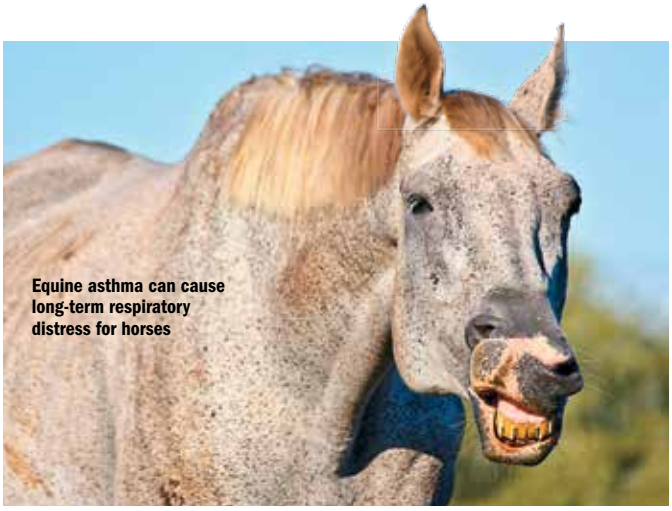
Is your horse struggling to breathe? Equine asthma might be the cause



Equine asthma can cause long-term respiratory distress for horses

ISTOCK

Recurrent airway obstruction (RAO), frequently referred to as heaves, negatively impacts horse health, performance, and welfare. Due to similarities between RAO and human asthma, a group of American College of Veterinary Internal Medicine (ACVIM) specialists recently updated its recommendations for RAO diagnosis and treatment. Those recommendations include adopting "equine asthma syndrome" to better describe a spectrum of chronic airway inflammatory disorders—from mild inflammatory airway disease (IAD) in young athletes to severe RAO generally observed in horses over 7 years of age.[1]

CLINICAL SIGNS

Horses with IAD, or mild asthma, typically present for poor performance, exercise intolerance, or coughing during exercise. They'll usually have mucus in the airways but no changes in resting respiratory effort.

In contrast, older horses with RAO, or severe asthma, suffer far more serious clinical illness, including:

- Episodes of increased respiratory effort ("heaves attacks"); this is the defining characteristic that classifies a horse as having RAO, not IAD, and is similar to human asthma attacks;
- Coughing at the start of exercise (seen in early stage RAO, but also evident in IAD);
- Frequent coughing that increases as the disease progresses;
- Nasal discharge but no fever (also seen in IAD);
- An obvious abdominal lift at the end of exhalation;
- A heave line (a line running diagonally from the point of the hip forward to the lower edge of the ribs in the external abdominal oblique muscle, which is caused by the persistently increased respiratory effort); and
- Sometimes weight loss due to the difficulty of eating while trying to breathe.[1–3]

CAUSES

Stabled horses, regardless of age, experience dust, mites, and mold exposure from bedding and hay; small molecules such as endotoxins (part of the bacteria's cell wall); and irritants, such as ammonia from urine. When horses inhale these small particles into the lower respiratory tract, they cause inflammation and mucus accumulation in the airway.

Younger horses with IAD generally have only mild inflammation, which can resolve spontaneously or might be permanent but manageable. In contrast, older horses with RAO suffer repeated bouts of airway-constricting inflammation, resulting in permanent changes in the lung and airway walls, which become irreversibly thickened. Structural changes make it progressively more difficult for air to flow to and from the lungs and for oxygen to diffuse into the bloodstream.[1,4]

It's important to note, says the ACVIM equine asthma consensus statement, that although IAD and RAO are both included under the equine asthma syndrome umbrella, some horses with IAD can spontaneously recover and won't necessarily develop RAO.

DIAGNOSIS

Older horses with severe RAO are typically easy to identify based on clinical signs. For young horses with suspected IAD and horses with mild RAO, however, endoscopy ("scoping") is indicated. Veterinarians use a mucous scoring system to describe the amount of mucus present in the trachea. The most accurate test is a bronchoalveolar lavage (BAL, or "lung wash"). This test will identify the type and number of white blood cells, such as neutrophils, eosinophils, and basophils, in the lungs. A lung wash not only helps diagnose equine asthma but also provides information regarding disease severity and progression.[5] In some larger hospitals, veterinarians can preform lung function testing to assess lung sensitivity to inhaled triggers and monitor changes in airway resistance while treatment is administered and fine-tuned over time.

Additional tests might help your veterinarian rule out other potential causes for airway inflammation, tracheal mucus accumulation, and poor performance. Examples include viral or bacterial respiratory tract infections, lungworm infections, exercise-induced pulmonary hemorrhage, upper respiratory tract conditions, and even neoplasia (tumors).

TREATMENT

The best way to minimize RAO's impact on your horse is to manage his environment. According to the ACVIM, there are two main ways to protect a horse's "breathing zone" (i.e., the 2-foot sphere around the horse's nose from where he draws breath):[2]

1. Use low-dust feedstuff and bedding. These products reduce the volume of respirable particles.
2. Improve barn ventilation. Opening the barn doors and windows to adopt a more "open" stable design, and don't muck stalls or leave the tractor running next to the barn while your horse is inside.

Also consider keeping horses on pasture as much as possible, and for horses living in stalls, reduce harmful ammonia levels. In one recent study, researchers found that horses bedded on peat

rather than wood shavings were exposed to lower ammonia levels,[6] and ammonia-neutralizing additives can also help create a healthier stall environment.

Offer a complete pelleted feed or hay cubes instead of hay to reduce dust exposure. If you do offer hay, spread it on the ground to encourage mucus drainage from the airways and consider soaking or wedding it. Avoid hanging hay nets, which can drop debris into the horse's nostrils, or feeding large bales or piles of dusty hay, which can prolong daily particle exposure.

Your veterinarian might treat your horse with inhaled or systemic corticosteroids (e.g., dexamethasone, prednisolone, fluticasone) or bronchondilators (e.g., clenbuterol, albuterol). Corticosteroids decrease inflammation in the airways, and bronchodilators relax and dilate the airway muscles. Bronchodilators such shouldn't be used for more than two weeks unless combined with a steroid, because they lose their effectiveness quickly.

The ACVIM supports feeding omega-3 fatty acids to asthmatic horses. Specifically, researchers found that supplementing horses with 1.5 grams of docosahexaenoic acid, one form of omega-3 fatty acid, once daily for two months in conjunction with low-dust bedding improved clinical signs of equine asthma rapidly.[7]

Once a horse's airway has become sensitive to the inhaled triggers and small particles, she will always be at risk for flare-ups. If a horse is simply given medications without instituting environmental changes, then she'll continue to have difficulty breathing. The good news is that in a recent review of conditions that end horses' lives, RAO was only responsible for two out of 241 equine deaths (0.8%).[8]

Finally, never underestimate your involvement. Owners play a crucial role in assessing their horses with RAO and altering management.[9]

Key References

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