



Recurrent Airway Obstruction (RAO) in horses

The Educated Horseman: Disease Series



Recurrent Airway Obstruction (RAO), formerly known as chronic obstructive pulmonary disease (COPD), or heaves, is a disease of the equine lung. RAO is a chronic, non-infectious airway condition in horses that is a result of an allergic reaction to inhaled particles such as, mold or dust found in feed or bedding.

Horses also suffer from another similar respiratory disease, summer pasture-associated obstructive pulmonary disease or SPAOD, which is also caused by the inhalation of allergens present specifically during the summer months. Once these allergens are inhaled, a reaction causes the small airways within the horse's lung to constrict. As a result of the allergic reaction, lung tissue becomes inflamed, thickened and excess mucus production occurs. RAO usually occurs in horses 6 years or older.

Symptoms of heaves include:

- Coughing,
- Exercise intolerance,
- Increased respiratory rate,
- Nasal discharge,
- Wheezing,
- Weight loss,
- Flaring of the nostrils, and
- Presence of a "heave line," which is an enlarged abdominal muscles resulting from the horse "heaving" or pushing out the last bit of air out of the lungs at the end of exhalation.

As the disease progresses, it becomes more difficult for the horse to exhale leaving the lungs overinflated. If this condition is left untreated, irreversible damage may occur to the lungs resulting in a permanent loss of lung function.

While one specific cause of heaves has yet to be determined, it is thought this disease is the result of a hypersensitivity/allergic reaction to inhalants found in the barn (hay, straw, bedding, barn dust, etc.). Heaves primarily affects horses stalled for long periods of time, increasing their exposure to allergens. Two primary

agents suspected in causing the hypersensitivity are mold, *Aspergillus fumigatus* and *Micropolyspora faeni* found in hay. The pasture-associated allergens have yet to be narrowed down, but are likely a combination of pollens.



While there is no definitive cure for heaves, change in management techniques to reduce or eliminate allergens from the affected horse's environment often reduces or even resolves clinical symptoms. If a horse is experiencing hypersensitivity to factors in its stall such as bedding, it is recommended to move the horse out to pasture with fresh grass as its primary source of roughage. If the sources of the allergens are pasture-related, moving the horse into a stall with low dust producing bedding such as peat moss, shredded paper, or cardboard might be beneficial. Feeding a "dust-free" diet also may be necessary. This may require soaking all hay in water prior to feeding, feeding a completely pelletized feed such as a complete feed, hay pellet, hay cube, or fermented hay products may also increase the chances of reducing the presence of allergens.

Medical treatments also may be required to alleviate the difficulty in breathing. Anti-inflammatory medicines, such as corticosteroids and bronchodilators are

traditionally used orally or injected. Recently aerosolized medicines have been prescribed after the development of the Aeromask (a tight fitting mask placed over the horse's nose that works much like an inhaler in humans). While the aerosolized treatments are somewhat cost prohibitive, they are very effective and have less risk of adverse side effects.

Unfortunately once a horse has been diagnosed with heaves, it will have the disease for life. The long-term course of the disease depends upon management, improvement of air-quality and reduced exposure to allergens. Despite the lack of a permanent cure for this disease, complete or near complete recovery from the clinical symptoms can be achieved with appropriate environment management and medical treatment. If you think your horse is suffering from recurrent airway obstruction or summer pasture-associated obstructive pulmonary disease contact your veterinarian immediately.

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