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Equine Influenza

Definition

Equine influenza virus A type 2 (H3N8), or the horse “flu,” is a common, highly contagious respiratory pathogen of horses caused by an orthomyxovirus. This virus is endemic within the United States horse population (constantly present at a baseline level), and most common within the fall and winter months. While horses of all ages, sex, and breed can be affected, horses aged 1-3 years old make up the majority of cases. Equine influenza is not zoonotic, meaning it cannot be spread between horses and humans.

Pathophysiology

The influenza virus is primarily spread through aerosolized respiratory droplets from infected horses, however fomites such as water buckets or hoses may transmit the virus as well although much less commonly. Once inhaled, the virus replicates and disrupts the normal cellular lining of the respiratory tract. A healthy respiratory tract has an apparatus called the mucociliary escalator which carries debris up and out of the lungs using mucous and specialized cells with a “wave-like” projection. In diseased horses, this apparatus is disrupted making it difficult for horses to clear debris from their lungs. This can predispose them to secondary bacterial infections on top of the viral infection.

The incubation time, or time from exposure to clinical signs, is 1-3 days. Horses can begin shedding the virus to other horses as soon as 48 hours after exposure and can continue shedding the virus for 6-7 days. Horses in close contact with other horses, such as at horse shows or race tracks, are at an increased risk of contracting the virus.

Clinical Signs

Clinical signs can include fever, depression, lethargy, anorexia, weight loss, a dry cough, and nasal discharge. Nasal discharge may be serous (clear in appearance) to mucopurulent (cloudy in appearance). Enlarged lymph nodes may also be palpated. It is not uncommon for multiple horses in the barn to be affected and displaying clinical signs.

Diagnosis

The first step in diagnosis is obtaining a history and performing a thorough physical exam. Blood is typically drawn for a CBC which may show a low white blood cell count due to a decrease in a specific type of white blood cell called a lymphocyte. There are various tests that can be performed in order to confirm a diagnosis of influenza. Some examples include virus isolation or PCR performed on a nasopharyngeal swab.

Treatment

The mainstay of treatment is providing supportive care. Rest and a low stress environment are critical to allow the respiratory tract to heal. A good rule of thumb is to provide one week of rest for every day the horse has a fever. Ensuring adequate hydration is also of great importance and IV fluids may be necessary in some cases. NSAIDS, such as banamine, may be administered to help bring down any fevers that develop.

Prevention

It is important to separate all infected horses from the general population. Take temperatures on all horses on the farm and immediately separate any who develop a fever. Infected horses must be quarantined for 14 days after cessation of clinical signs before being released back into the general population. Furthermore, it is always best practice to quarantine any horses returning home who had co-mingled with other horses while away. Implement biosecurity measures to help prevent fomite transmission. Two examples of this include hand washing between horses and making sure not to dip the tip of the hose in each horse's water bucket as you fill them. Lastly, vaccination is an excellent form of disease prevention. Current AAEP recommendations are to administer the influenza vaccine at 6 month intervals to all horses at an increased risk of exposure such as those horse showing. Horses who are not traveling and who reside at a facility with no horse traffic in and out of the farm may be vaccinated at yearly intervals.

Prognosis

Similar to the seasonal human "flu," most cases of equine influenza are self limiting. Clinical signs typically last from 1 to 3 days and resolve with supportive care. While the morbidity rate is high at 60-90%, the mortality rate is quite low at a mere 1%.