

Tetanus

Infectious disease caused by *Clostridium tetani* that accesses the body through skin lesions or open wounds. It is an anaerobic, spore-forming bacterium that begins to produce and release toxins once in vegetative form in the host tissue. Infected animals develop muscle rigidity which is the source of the term “lock jaw”. Prognosis is poor and infection usually leads to death. A vaccine is available.

Equine Encephalomyelitis

Alphavirus with 3 main strains: Eastern (EEE), Western (WEE), and Venezuelan (VEE). EEE and WEE natural reservoirs are birds or rodents. Those strains are then passed to the vector, a mosquito, that then infects the horse. A horse can be the vector for the VEE strain. Progresses to neurologic disease that is almost always fatal. There is no specific effective treatment, only supportive care. A highly effective vaccine is available for prevention. All strains are reportable diseases, VEE is also reportable as a foreign animal disease.

West Nile Virus (WNV)

Causative agent is a flavivirus that uses a bird as a host and mosquito as a vector. Horses and humans are considered “dead-end” hosts as the virus cannot replicate to the extent of becoming a vector. A small fraction of horses will develop encephalomyelitis that could progress to recumbency. The severity of the disease is variable, but a large percentage of horses that become recumbent do not survive. There is not a specific treatment, only supportive care. A vaccine is available.

Rabies

Rhabdoviridae family virus that is transferred by saliva of rabid animals and attacks the central nervous system. Typical feral species transmitting rabies are raccoons, skunks, bats, and foxes. Saliva is introduced via bite wound or infected saliva contact with an open wound. It is a universally fatal disease, there is no treatment or cure, and animals succumb rapidly. Official diagnosis can only be made postmortem, and all positive cases should be reported. An effective vaccine is available.

Equine Influenza

Influenza Type A is a virus that affects the equine respiratory tract. It is contracted via aerosolized droplets from the infected individual coughing. Horses can be subclinical but still shed the virus. Pneumonia can develop as a secondary complication. Treatment consists of supportive care and management of clinical signs. A risk-based vaccine is available but is short-lived.

Equine Herpes Virus (EHV)

Also referred to as viral rhinopneumonitis. 2 common strains: EHV-1 and EHV-4, both are a DNA virus. Both strains are transmitted through aerosolized particles from coughing or fomites.

- EHV-1 affects the nervous system causing equine herpesvirus myeloencephalopathy (EHM). It also affects the reproductive tract causing pregnant mares to have spontaneous abortions. Neurologic disease can progress to recumbency. Prognosis is significantly better if the animal does not become recumbent. Treatment is usually a combination of antibiotics, steroids, and anti-inflammatories. Survivors could be lifelong shedders. There is a vaccine available.
- EHV-4 primarily affects the respiratory tract and lymph nodes. Treatment includes antibiotics and supportive care. Horses can become lifelong shedders when stressed. There is a vaccine available.

Rhodococcus

Rhodococcus equi is the causative agent of the disease. It affects foals 4-12 weeks of age and is a gram-positive bacteria found in soil. The bacteria are internalized through inhalation or ingestion of contaminated soil. It will affect the gastrointestinal tract or the lungs. Pneumonia or lung abscesses can result from lung infection. High recovery rate with antibiotics and additional supportive care. High fatality rate without appropriate treatment. There is the potential for zoonosis in immunocompromised humans.

Botulism

Anaerobic bacterium *Clostridium botulinum* spores enter the body through ingestion. Spores will then germinate and begin releasing neurotoxin. 3 major exposure mechanisms: 1) Foals (1-3 months old) ingest spores that proliferate in gastrointestinal tract; "shaker foal syndrome" 2) Most common for adult horses is ingestion of preformed neurotoxin in feedstuffs 3) Contamination of wounds by spores from the environment. Flaccid paralysis is a common consequence of neurotoxin. An antitoxin is available, as well as a vaccine.

Equine Viral Arteritis (EVA)

Contagious viral respiratory pathogen that affects not only the respiratory tract but the reproductive tract as well. Primarily transmitted through respiratory routes but can also be transmitted through venereal, congenital or fomite routes. It has the potential to cause infertility in mares and stallions and abortion in pregnant mares. There is no antiviral treatment for the disease specifically, only management of clinical symptoms (fever, depression, anorexia, edema).

Potomac Horse Fever (PHF)

Also referred to as monocytic ehrlichiosis or equine ehrlichial colitis. The main vectors are aquatic insects and freshwater snails, ingestion of the vectors is a mode of transmission. It can also be acquired through whole blood transfusion from an infected donor or through the placenta. Typically, it's a seasonal disease that occurs during the warm months. Endemic to the area of the Potomac River. Oxytetracycline is the antibiotic of choice for treatment and supportive care will also be needed. It can be fatal if not treated appropriately.

Strangles

Highly contagious upper respiratory tract disease caused by bacteria *Streptococcus equi*. Transmission is direct horse-to-horse contact or fomites. It affects the guttural pouches and lymph nodes. Lymphadenopathy in the area can lead to dysphagia or respiratory distress. Lymph node abscesses will usually form and need to be lanced or will burst. Treatment includes antibiotics and supportive care. Recovered horses may shed for months to years, typically only affects horses under 5 years of age. Risk-based vaccine is available.

Equine Protozoal Myeloencephalitis (EPM)

A disease caused by ingestion of sporocysts from protozoal parasite *Sarcocystis neurona*. Horses contract spores by ingesting feed or water that is contaminated by the definitive host of the protozoa, the opossum. It is a multifocal neurologic disease that affects the central nervous system. Current antiprotozoal treatment can improve neurologic signs, but relapse is common. Good husbandry is the only current preventative.

Hyperkalemic Periodic Paralysis (HYPP)

Genetic mutation found in Quarter Horses that is inherited as an autosomal dominant trait. Origin has been traced back to American Quarter Horse stallion Impressive. Affected horses will have a defect in the sodium channels causing them to “leak” sodium. In turn, more potassium will be released into the bloodstream, hence hyperkalemia. There is no cure, clinical signs are managed through medications and diet.

Salmonellosis

Contagious bacterial disease that affects the gastrointestinal tract and vascular system. *Salmonella* spp. are the causative agent and are spread via fecal-oral route. Antibiotics indicated via culture can be used for treatment, supportive care is also necessary. Horses can shed for 30+ days after an acute episode and should be kept isolated. This is a zoonotic disease.

Equine Infectious Anemia (EIA)

Retroviral, blood-borne infection transmitted by blood-feeding insects primarily of the *Tabanidae* family (Horse & Deer flies). Infected horses can be acute, chronic, or inapparent carriers. Can have acute phases at any point, acute phase can turn fatal. Once contracted a horse is considered infected for life. Diagnosis is provided via agar gel immunodiffusion (AGID) also called a Coggin's test. ELISA test available but not as reliable. This is a reportable disease.