

The Animal Medical Clinic

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Distemper in Dogs

Canine distemper is a contagious viral disease of dogs. It was a fairly common disease in the United States until the introduction of effective vaccines in the 1960's. In some parts of the world, it remains an important and devastating disease.

Prevalence

Canine distemper virus (CDV) is present on a worldwide basis. In addition to dogs, other species can become infected. These other species include coyotes, foxes, raccoon, ferrets, mink and skunks.

Young dogs are more susceptible to the distemper virus than are more mature dogs. For dogs that become infected with CDV but survive, longstanding immunity usually results, but this immunity may decline with time.

Research statistics have shown that many more dogs are infected with CDV than actually show signs of the disease.

Causes/Transmission

Dogs infected with the virus shed it in their feces, saliva, urine, ocular (eye), and respiratory secretions. New infection is established in a dog by inhalation of aerosolized respiratory secretions. Once the virus invades the dog's respiratory tract, it begins to reproduce. If the dog does not initiate a strong immune response by the second or third week of the infection, cells infected with the virus begin to spread to other parts of the body. At this point, recovery from the disease becomes less likely.

Clinical Signs

There is great variation in the duration and severity of signs with distemper. In some dogs, distemper presents as a relatively mild disease with either no clinical signs or nonspecific signs, such as fever, depression, enlarged tonsils, or weight loss.

More specific signs include ocular and nasal discharges, respiratory distress, coughing, diarrhea, vomiting. The ocular and nasal discharge usually starts out as clear and then changes to a more cloudy fluid. Some dogs develop skin infections or very thickened footpads. For this reason, distemper has been called "hard pad" disease. Puppies that have become infected while their permanent teeth are developing will often have defects in the tooth enamel.

In some dogs, CDV invades the central nervous system. Once this occurs, recovery from distemper is almost impossible. A variety of neurologic signs can be seen and include seizures ("chewing gum fits"), complete or partial paralysis, incoordination, visual problems, a head tilt or head bobbing, muscle tremors, and neck pain. In old dogs, progressive encephalitis called "old dog encephalitis" occurs rarely. It is thought to be caused by CDV. In these dogs, compulsive circling and head pressing are observed most commonly.

Diagnosis

In many cases, a presumptive clinical diagnosis can be made by the particular clinical signs, evaluation of the vaccination history of the dog, and changes in bloodwork. To aid in the diagnosis, blood can be analyzed at special laboratories to determine rising levels of globulins (antibodies) in the blood over a period of a few weeks. When it is possible to obtain spinal fluid, this can also aid in the diagnosis.

Definitive diagnosis can be made by demonstration of the unique “inclusion” bodies seen microscopically in some cells. These inclusions can be seen in blood cells, bone marrow, and tissue samples.

Treatment

No specific therapy is available. At best, good supportive care and control of any secondary bacterial infections is all that can be offered. Supportive care should be directed toward minimizing stress and meeting the need for fluids and nutrition.

Prognosis

The prognosis is uncertain because there is no effective antiviral medication for canine distemper once a dog has become infected. In most cases, once a dog shows clinical signs, the prognosis is guarded; many die of the disease.

Transmission to Humans

There is no health risk to humans caused by CDV.

Prevention

Young puppies usually have protective immunity transferred from the mother through her milk. This immunity declines by six to eight weeks of age, however, and leaves the puppy susceptible to CDV. At this time (6-8 weeks), puppies should begin CDV vaccination with boosters given every 2-3 weeks until 14-16 weeks of age. These periodic boosters are recommended because some puppies may not begin to respond to the vaccine until after they are 6-8 weeks of age. Thereafter, yearly boosters are given.

No vaccine is considered 100% protective, but most dogs will respond to distemper vaccine and have adequate protection against CDV.