Canine Parvovirus

Canine parvovirus is a highly contagious viral infection that causes potentially severe illness. The virus infects rapidly dividing cells such as cells of the intestines, bone marrow and lymph (immune system) cells, and fetal cells.

Affected animals shed a large amount of virus, which contributes to the highly contagious nature of the disease. Additionally, the virus is hardy and is able to survive in the environment for several months or more. Certain disinfectants including bleach solution can kill the virus, but certain surfaces such as grass and dirt are very difficult to effectively disinfect.

Several factors may contribute to parvovirus causing disease in some animals while others in the same environment do not get sick. Factors include the amount of virus an individual is exposed to, the immune system of that individual including in puppies the amount of maternal antibodies (disease fighting complexes), vaccination history, and prior exposure to the virus. Also, animals under stress, such as shelter animals, animals travelling and competing, or animals affected by other disease, including intestinal parasites, are more susceptible. Generally puppies and adolescent dogs are at highest risk of disease. Most adult dogs have some immunity secondary to vaccination and exposure to the virus at low levels in the environment.

Clinical signs of disease include vomiting, diarrhea (most often with blood), decreased appetite, fever, and lethargy. It is very important in young dogs and puppies especially showing these signs that a veterinarian examines them as soon as possible. Continued vomiting and diarrhea leads to severe dehydration, which can then lead to many other problems. Also, if parvovirus is the cause, early diagnosis is essential so that proper treatment and containment measures may be taken. If left untreated, and even occasionally in animals receiving treatment, the disease can be fatal. Certain breeds such as pit bulls and Rottweilers seem to be more severely affected than others.

Diagnosis is based on history, clinical signs, fecal exam, and blood work including a CBC (complete blood cell count) and chemistry screen (to check kidney, liver, and electrolyte values). There is a commercially available test for parvovirus, used in many veterinary hospitals, that provides a rapid result. The test is based on a swab of a fecal sample. While not 100 percent accurate, this test is still very helpful in rapid diagnosis of the disease.

Treatment most often requires hospitalization for intravenous fluids with electrolytes and other injectable medications. Common medications used include antiemetic medication to reduce nausea, gastroprotectants to reduce stomach acid production and to address and prevent further damage to the gastrointestinal system. Antibiotics are used to treat secondary bacterial infections. In severe cases plasma or whole blood transfusions may be necessary. Plasma is used to replace proteins lost through the compromised intestinal tract and to replace clotting factors in patients that have developed blood-clotting abnormalities secondary to disease. Whole blood transfusions

may be necessary in cases with severe blood loss (through diarrhea) and anemia. Whole blood will also offer the benefits of plasma. Some veterinarians may give serum from blood of vaccinated/immune animals to provide antibodies (disease fighting complexes) specific to parvovirus. The effectiveness of this procedure is controversial.

Recently, there have been some new developments in the treatment of parvovirus including the use of Tamiflu (oseltamivir). So far, reports are controversial, but there are several reports of successful treatment with improved outcomes when Tamiflu is added to the treatment plan. Again, early diagnosis and institution of treatment is essential to improving outcomes. Also, there is a relatively recent addition of an antiemetic to the arsenal of treatments available for dogs. The medication is Cerenia (maropitant.) The manufacturer has done studies that show use of this antiemetic to control nausea in parvovirus patients leads to improved appetite earlier in the course of disease. It is believed that the sooner the patient can eat (a low fat, easily digestible diet), the shorter the course of disease and therefore an improved outcome.

There is talk among the dog owning community about a "new" strain of parvovirus. There are three commonly seen strains. They are Canine parvovirus (CPV) -2a, CPV-2b, and CPV-2c. CPV-2c is the newest. It was first identified in 2000 and is a mutation of an earlier strain of disease. Currently available vaccines are effective against all three strains of parvovirus.

Canine parvovirus is a serious, highly contagious, potentially fatal disease. Early diagnosis and aggressive therapy are essential for positive outcome of disease. Prevention is the best medicine. Strict hygiene and isolation from dogs with unknown vaccination history, dogs traveling to shows, events, dog parks, etc. is very important for newborn puppies and puppies not yet vaccinated against the disease. Proper vaccination and routine health care of the dam will improve the chances of maternal antibodies being passed to the puppies to offer protection from disease during the first few weeks of life.

For further information regarding canine parvovirus, along with many other diseases, visit www.VeterinaryPartner.com. This website is related to VIN (Veterinary Information Network), a site used as a resource by many veterinarians to gain access to veterinary specialists, conference proceedings, and the most current information. Other helpful resources include www.avma.org and www.aahanet.org

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Dr. Grace Ann Mengel drawing blood on her Weimaraner Lulu for her 16-week vaccine titre.