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Parvovirus in Cats

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BASIC INFORMATION

Description

Feline parvovirus (FPV) causes a disease known as *feline distemper* or *feline panleukopenia*. It is a highly contagious disease of young, unvaccinated cats. A high death rate is associated with the disease.

Cause

FPV is related to the virus that causes canine parvovirus. The virus is shed in all body secretions, but virus present in feces is the primary source of infection. Transmission occurs by contact with infected animals or from contaminated environments or equipment. The virus can also cross the placenta of pregnant animals and infect developing kittens.

The virus infects rapidly growing and dividing cells, such as cells in the lining of the intestines, lymphoid tissues, and bone marrow (especially stem cells that can develop into all blood cell types). FPV occurs most commonly in young kittens between 3 and 6 months of age. Most cats greater than 1 year old are immune because of prior subclinical infection (that produced no clinical signs) or vaccination. Kittens younger than 6-8 weeks of age are often protected by antibodies they received from their mother prior to birth.

Clinical Signs

Adult cats may show no clinical signs. Kittens may die within 12 hours, with few or no signs. More often, fever, depression, lack of appetite, vomiting, and severe dehydration are noted. Diarrhea may occur later and may be bloody.

Infection early in pregnancy may cause fetal resorption (death and dissolution of the embryo) and infertility in apparently healthy queens (mother cats). Infection later in pregnancy may cause abortion of fetuses and stillbirths. A brain abnormality (cerebellar hypoplasia) may occur in kittens exposed to the virus prior to birth. These kittens may have seizures, be uncoordinated, and have poor motor skills.

Diagnostic Tests

Diagnosis of FPV can be made on the basis of several laboratory tests, such as the following:

- Early in the disease, a complete blood cell count shows a severe decrease in the numbers of circulating white blood cells (leukopenia). A decrease in all white blood cell types is called *panleukopenia*; hence, the name for the disease. Anemia and decreased platelets may also be seen.
- A blood biochemistry profile may show evidence of liver inflammation, altered kidney function, and electrolyte imbalances.

- Fecal test kits for canine parvovirus can also detect FPV, but false-positive and false-negative results do occur.
- Dead kittens may be submitted for necropsy examination (similar to an autopsy in people).

Other tests, such as fecal tests, x-rays, and other laboratory assays, may be recommended to rule out other diseases that cause similar signs.

TREATMENT AND FOLLOW-UP

Treatment Options

Treatment consists of supportive care, because no specific antiviral therapy is available for FPV. Fluid therapy is used to correct dehydration. Medications that decrease stomach acid, stop vomiting (antiemetics), and treat secondary bacterial infections (antibiotics) may also be given. Blood transfusions may be needed for severe anemia. Good nursing care is important to prevent urine or fecal scalding on the skin and secondary bacterial infections.

Food is withheld from kittens with vomiting and diarrhea. Once the vomiting has stopped for 12-24 hours, small amounts of water can be offered, and then bland food. After food is well-tolerated, the regular diet can be gradually reintroduced.

Cerebellar hypoplasia is not treatable but usually does not worsen, and uncoordinated kittens may be able to compensate well and lead good-quality lives.

Prevention

The virus is very stable in the environment. It can survive in organic material for months to 1 year at room temperature and for longer periods at lower temperatures. Contaminated surfaces must be washed to remove any organic material and then disinfected. Bleach is a good disinfectant to use for FPV. Materials that may harbor the virus but cannot be washed and disinfected should be discarded.

The virus is highly contagious to all cats. Vaccination is recommended, because clinical disease is rare in vaccinated cats.

Follow-up Care

If the cat recovers, it has lifetime immunity to the disease. The virus can be shed for up to 6 weeks after recovery, so precautions must be taken to protect other cats and the environment.

Prognosis

Infected kittens that survive for longer than 5 days usually recover, but recovery may take several weeks. Older kittens usually have a milder form of the disease and a better prognosis. Kittens with brain involvement often have permanent neurologic abnormalities but may adapt well to living with these disabilities.