

## **Feline leukemia virus, FeLV**

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### **Affected Animals:**

Cats.

### **Overview:**

The feline leukemia virus (FeLV) has been compared to the human AIDS virus because of its effect on the immune system. A contagious and often fatal disease, feline leukemia can cause multiple organ disease, cancer, bone marrow suppression resulting in low numbers of platelets and red and white blood cells, and a weakening of the immune system that makes it less likely that an affected cat will overcome infections. There is no cure for feline leukemia, but there are medications that can help enhance the cat's quality of life.

Feline leukemia virus is contagious and affects cats of all ages, sexes, and breeds. It is passed from cat to cat most commonly through a bite wound acquired while fighting. Outdoor, male cats that have not been neutered are most likely to develop the virus because they frequently roam and fight other cats to defend their territory. There is a vaccine available for cats at high risk for the disease; however, because the vaccination, in rare cases, has been associated with a form of cancer, it is not recommended for animals that have a low risk of contracting feline leukemia.

### **Clinical Signs:**

Cats that are infected with feline leukemia virus often will develop anemia, anorexia, weight loss, lethargy, diarrhea, dehydration, respiratory infections, dental disease, and sometimes a fever. Secondary infections and multiple organ disease are complications associated with the virus.

### **Symptoms:**

Frequently owners bring their cats to the veterinarian because the owner feels the cat is doing poorly or is "not himself; " the cat may have stopped eating or have developed a poor appetite. Weight loss, listlessness, and depression are also symptoms. Some cats may have respiratory tract infections, diarrhea, dental disease, and fever. In addition, many cats with the disease may be dehydrated and have a poorly groomed hair coat.

**Description:**

Feline leukemia is an RNA virus or retrovirus, meaning that the virus duplicates itself by using the cat's own genetic replication equipment. Thus, the virus multiplies and can be found in the blood, saliva, tears and many other cells throughout the body, including the bone marrow. The virus leads to multiple problems including cancer such as lymphoma; leukemia, which is cancer in the blood stream; bone marrow suppression; immunosuppression; and reproductive disorders. It is especially dangerous when the virus affects the bone marrow, which is responsible for producing all the blood cell types -- each of which plays a vital role in the animal's life. Red blood cells carry oxygen, white blood cells fight infection, and platelets help stop bleeding. If the bone marrow is suppressed, then the cells are not produced, leading to many potentially life-endangering complications. A common result of FeLV infection is immunosuppression, similar to the condition that affects humans who carry the HIV virus. Immunosuppression is an inability of the cat's imm

Of cats that are exposed to feline leukemia naturally, some will carry the virus and become sick and die within two to three years. Other cats that have a strong immune system are able to clear the infection within two months. The rest of the infected cats develop "latent" infections in which the virus remains in hiding for a period of time, after which it comes out of dormancy to cause disease and death. Cats that have tested positive to feline leukemia should be re-tested in two to three months to see if they are able to clear the virus from their system.

**Diagnosis:**

A thorough history and physical examination are vital to detect many of the conditions associated with a feline leukemia virus infection. A diagnosis of feline leukemia can be confirmed by several different kinds of tests. However, a quick blood test called an ELISA, performed by the veterinarian, can detect the presence of the virus.

Cats that test positive for feline leukemia should have baseline blood work done to see if the virus is causing diseases of the organ systems. A chemistry panel will help detect diseases of organs such as the kidney and liver. Also, a complete blood count, or CBC, will determine the number of red blood cells, white blood cells and platelets. The virus can reduce significantly the bone marrow's production of these vital cells.

X-rays of the chest and abdomen often are taken to detect the presence of cancer.

**Prognosis:**

Cats that are infected with the feline leukemia virus can survive many years and have an excellent quality of life. However, once the virus begins to cause secondary diseases, the cat eventually will die due to complications from the disease. The most common causes of death due to feline leukemia include cancer, anemia, and bacterial and viral infections.

#### **Transmission or Cause:**

The most common way that cats become infected with the feline leukemia virus is through direct contact with the saliva or nasal secretions of an infected feline -- which often occurs during a fight when a cat with the virus bites an unvaccinated animal. The virus cannot survive in the environment, so urine and feces are not significant sources of infection to other cats. In addition, routine disinfectants will eliminate the virus from cages and other surfaces. However, cats that groom each other and share food and water sources can transmit the virus because the saliva of an infected cat is contagious. Less commonly, the virus can be passed from a mother cat to unborn kittens in the uterus. Mother cats also can transmit the disease while grooming or nursing the kittens.

#### **Treatment:**

There are no medications that can eliminate the virus from the cat's body, nor is there a cure for feline leukemia. However, there are methods for improving and prolonging a diseased cat's life. Certain medications, such as alpha interferon, may improve a cat's clinical signs and prolong its survival. Antiviral medications can also be beneficial. These help to suppress viral replication, although they will not eliminate it. Such treatments can be expensive and usually are prescribed for the remainder of the cat's life.

Cats that are sick usually need to remain in the hospital for several days in order to provide the necessary care for stabilization. Bacterial infections that develop as a result of the virus require treatment with antibiotics. If the cat is very anemic, a blood transfusion may be necessary to replace the red blood cells. Intravenous fluid therapy is often necessary in cats that have kidney disease or in cats that are dehydrated because they are not eating, have diarrhea, or are vomiting frequently.

#### **Prevention:**

The best way to prevent cats from developing feline leukemia is to keep them indoors and away from other cats that could be carrying the virus. If there is another cat in the house that has feline leukemia, do not allow the animals to share litter boxes, water or food bowls. The vaccine for feline leukemia virus is recommended for cats that do go outdoors or are at high risk for developing the virus for other reasons. Because the vaccine can, in rare instances, cause a type of tumor called a fibrosarcoma, it currently is recommended that only cats at risk be vaccinated. New vaccines currently are being developed that will not cause these types of reactions in the future.

Cats that have feline leukemia must be kept indoors to prevent the spread of the virus to other cats. In addition, cats with the disease should avoid exposure to bacteria, viruses, and other pathogens present in the outside environment since their weakened immune system are less capable of fighting off organisms that cause illness and infection.