



MANHATTAN CAT SPECIALISTS

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FIV - Feline Immunodeficiency Virus

"All things considered, he is doing amazingly well", I told Barry Axtell and Paul Riedel, owners of Buster. Buster, a sweet-tempered black and white domestic shorthaired cat, has been coming to my cat hospital for regular twice-yearly visits, and at every visit he's looked fit and healthy. While this may be expected for most well-fed house cats, Buster's circumstance is special. For the past 10 of his 12 years, Buster has been FIV-positive.

The feline immunodeficiency virus was isolated in 1986 from a cat with clinical symptoms that were strikingly similar to those seen in humans with acquired immunodeficiency syndrome (AIDS), the disease associated with human immunodeficiency virus (HIV) infection. Cats acquire the infection by being bitten by another cat that is infected with the virus. Free-roaming, non-neutered male cats are at higher risk due to their territoriality and increased propensity for fighting. Casual, non-aggressive contact does not transmit the virus. Neither does sharing food and water bowls, or litter boxes. "While FIV is similar to Human Immunodeficiency Virus (HIV) and results in a feline disease similar to AIDS in humans, FIV infections are restricted solely to cats", says Lisa Conti DVM, MPH, Dipl. ACVPM, CEHP, Director, Division of Environmental Health, State of Florida. "Nevertheless, from a public health standpoint, immunocompromised people should not be exposed to cats with FIV infections because of other communicable infections these cats may have."

FIV progressively disrupts normal immune function. Cats exposed to the virus may go through three stages of infection: the acute stage, lasting 3 to 6 months; the subclinical stage, lasting months to years; and the chronic stage (the feline AIDS stage), which may also last months or years. Cats in the first (acute) stage of infection experience mild disease (fever, lymph node enlargement, intermittent lethargy and decreased appetite). Most cats recover with no treatment, and are rarely presented for veterinary care in this stage. Cats then progress to the subclinical stage, where they remain clinically healthy, although their immune function continues to deteriorate, as the virus causes a continuous decline in CD4+ cells – white blood cells important for proper immune function. As stated above, this stage can last for several months or years. As their CD4+ cells reach very low levels, the third stage of disease develops, and cats may show signs of their illness.

Many FIV-infected cats are healthy, like Buster, and remain in the subclinical stage for years. Others have a history of recurrent illness (see sidebar). Three of the most common disorders associated with FIV are stomatitis (inflammation of the mouth), neurologic disease, and cancer.

Common Manifestations of FIV Infection:

- Stomatitis (inflammation of the mouth)
- Cancer (especially lymphosarcoma and cutaneous squamous cell carcinoma)
- Ocular (eye) inflammation
- Anemia and leucopenia (low white blood cell counts)
- Opportunistic infections
- Kidney failure
- Lower urinary tract disease
- Glandular disorders (hyperthyroidism, diabetes)
- Chronic gastrointestinal problems
- Chronic skin disorders

Achieving a diagnosis is relatively straightforward. In-hospital blood tests designed to detect antibodies to FIV are inexpensive and easy to perform, and can provide results in minutes. The test is very accurate, however, because false positive results are occasionally seen, a cat that tests positive on an in-house test should either have the test repeated on a different blood sample, or have the FIV status confirmed with a different type of test (called a Western blot test).

Therapy is generally symptomatic. Fortunately, many cats infected with FIV respond as well as their uninfected counterparts to appropriate medications and treatments, although a longer or more aggressive course of treatment is often needed. Oral, skin, or gastrointestinal infections are treated with appropriate antimicrobial drugs. Inflammatory conditions may require therapy with systemic anti-inflammatory drugs, such as corticosteroids. Treatment of the viral infection itself is somewhat limited. Clinical use of antiviral drugs is still not very common in veterinary medicine. Except for feline interferon now on the market in Japan, no antiviral drugs are licensed for veterinary use. Instead, human drugs must be used in animals. Most of these drugs are specifically intended for treatment of HIV infection. Zidovudin (AZT) has been the most studied anti-FIV drug. AZT does appear to improve the clinical signs and immune status of FIV-infected cats, improving survival time. Unfortunately, as with HIV, AZT-resistant mutants of FIV can arise as early as 6 months of treatment. While there is no licensed or approved treatment that has been shown to reverse well-established FIV infections in cats, a study described in the April 2003 issue of *Antimicrobial Agents and Chemotherapy* (the official journal of the American Society of Microbiology) has generated some excitement. In that study, scientists from the Parker Hughes Cancer Center in Roseville, Minnesota reported the successful treatment of cats chronically infected with FIV using a drug called stampidine. Cats in the study showed a drop in viral load when treated with the drug. At higher doses, stampidine eliminated FIV in cats with no side effects. No decision has yet been made as to whether this drug will be made available for cats.

Owners of FIV-positive cats should keep their cats strictly indoors, not only to prevent their cat from spreading the disease to others, but to prevent their immunosuppressed cat from being exposed to infectious agents carried by other animals. Owners of FIV-negative cats should keep their cats indoors, to avoid encounters with infected cats. Cats that do go outdoors should be spayed and neutered, to limit the spread of FIV by decreasing fighting and roaming behavior. In March of 2003, the U.S. Department of Agriculture approved the first vaccine against FIV. The vaccine is now available to veterinarians across the country. While the vaccine is said to provide reasonable immunity against FIV infection, its use remains controversial. The current FIV test is designed to detect antibodies against

the virus. Cats vaccinated against FIV will develop antibodies against the virus. As such, if a cat of unknown vaccination status is presented to a veterinarian or animal shelter, and that cat tests positive on an in-house FIV test, it is currently not possible to distinguish whether the antibodies in their bloodstream developed in response to previous vaccination, or in response to natural infection. Until a test is developed that can distinguish between vaccine-induced antibodies vs. antibodies that arose due to natural infection, veterinarians must evaluate the potential risks and benefits of vaccination based on each individual cat's lifestyle and circumstance.

With proper care, FIV infected cats can live many years, and in fact may die from disorders common to elderly cats and not from illnesses related to their FIV infection. Quality of life for FIV positive cats is generally very good.

When should cats be tested for FIV?

- If the cat has never been tested before
- If the cat is sick, even if the cat has tested negative in the past, if subsequent exposure can't be ruled out
- When the cat is adopted, regardless of whether there are or aren't any other cats in the household
- If the cat has recently been exposed to an infected cat
- If the cat has recently been exposed to a cat of unknown status
- If you're considering vaccinating the cat against FIV