

# Victory Animal Hospital

Blk B, 1/F, Chung Yuen Mansion, 71b Waterloo Rd., Kln, Hong Kong

Phone: 852 2711 0332 Email: info@globavet.com

## Feline Infectious Peritonitis

### What is feline infectious peritonitis?

Feline infectious peritonitis (FIP) is an important disease of domestic cats and most members of the cat family (*Felidae*). It occurs worldwide in cats of all ages, but the disease is most common in young cats less than two years of age. Although FIP is not a particularly common disease, it is important because once a cat develops the disease, the outcome is almost invariably fatal.

#### What is the cause of FIP?

FIP is associated with a viral infection called Feline Coronavirus (FCoV). There are many different strains of Feline Coronavirus, which differ in their ability to cause disease. It is now known that Feline Enteric Coronavirus strains can mutate to the more harmful type of virus and cause FIP disease.

#### "FIP remains one of the least understood of all cat diseases."

Because the Enteric Coronavirus and the FIP-causing strains of Feline Coronavirus are indistinguishable in laboratory tests (see later) and because many cats, even when infected with known FIP-causing strains do not develop FIP disease, the diagnosis of FIP is very challenging. The factors determining why one cat becomes diseased while others remain unaffected are unclear. Repeated re-infection and/or genetic factors are thought to contribute to the development of FIP. FIP remains one of the least understood of all cat diseases.

#### How does a cat become infected with Feline Coronavirus (FCoV)?

It is not certain how most cats become infected with FCoV. Direct contact between cats is the most likely route of transmission. The FCoV is present in the blood of infected cats, at least in the early stages, and may be shed in urine and feces. Biting insects such as fleas may also spread infection.

This initial benign infection may later mutate to cause FIP in some cats. Many cats that develop FIP have no history of contact with other cats showing clinical signs of FIP. The virus can remain dormant or 'latent' in the body for months to years before the cat eventually develops disease.

### What clinical signs does a cat infected with FIP develop?

Most cats exposed to FCoV, even to the potentially FIP-inducing strains, are able to develop an immune response that protects them. Thus, only a small proportion of infected cats actually develop clinical disease. However, those that do develop disease almost invariably die.

In cats that do develop FIP disease, the first signs of illness may be very vague. Listlessness, lethargy, decreased or absent appetite and a variable fever are commonly reported clinical signs. After a period of several days to a few weeks other symptoms will develop. At this stage, most cats will develop the "wet" form of FIP, which refers to the accumulation of fluid that occurs in body cavities; fluid may accumulate in the abdomen, leading to a swollen abdomen, or in the chest cavity, resulting in difficulty with breathing. In some cats, little or no fluid accumulates ("dry" FIP as opposed to "wet" FIP) but there may be a severe inflammation in one or more organs including the eyes, brain, liver, intestine or other organs of the body, leading to a variety of clinical signs. Once disease develops, most individuals deteriorate rapidly, although some cats remain normal for several weeks. Unfortunately, the disease will eventually result in death in almost every case.

#### How can FIP be diagnosed?

Because FIP presents with a variety of clinical signs, and many of these signs occur with other diseases, FIP is particularly difficult to diagnose. There may be abnormalities in a routine blood analysis, but none is specific for FIP. X-rays may be helpful to determine the presence of fluid in the abdomen or chest. If fluid is present, some of it can be this removed by "tapping" the chest or the abdomen.



"Your veterinarian may advise that a biopsy be taken from your cat, so that FIP can be distinguished from a treatable disease."

Currently the only way to make a positive diagnosis of FIP is by histological examination of affected tissue (or by post-mortem examination) by a pathologist at a laboratory. If there is any doubt about the diagnosis, your veterinarian may advise that a biopsy be taken from your cat, so that FIP can be distinguished from a treatable disease.

### I understand there are specific blood tests. How reliable are these?

Several companies produce kits that detect antibodies to Feline Coronavirus in blood. Some veterinary laboratories provide tests such as polymerase-chain reaction (PCR) tests, which can detect minute amounts of the virus. Although some of these tests claim to be able to distinguish between the strains, and to detect strains more likely to be associated with FIP, most independent experts disagree with this claim. Therefore, a "positive" test in a healthy cat is not a strong predictor of subsequent FIP disease.

"If a cat has clinical signs consistent with a diagnosis of FIP then a "positive" test is supportive of the diagnosis."

# Is there any treatment for FIP?

FIP is fatal in almost all cases. There is no specific treatment. Anti-inflammatory drugs such as corticosteroids (sometimes used in combination with immunosuppressive drugs of the type sometimes used in cancer therapy), may temporarily suppress symptoms and improve the cat's quality of life. For the clinically ill cat, once FIP has been diagnosed, euthanasia may be the most humane and appropriate course of action.

# Are other cats in the household at risk?

If your cat has FIP, other cats in your household may be at a greater risk for becoming infected with the virus that can cause FIP. Fortunately, infection will lead to this fatal disease in only a few cats.

This client information sheet is based on material written by: Ernest Ward, DVM
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