FELINE LEUKAEMIA VIRUS

What is feline leukaemia virus?

Feline leukaemia virus (FeLV) is an important viral infection of cats, being a cause of illness and death. Infection is more common in colonies of cats where there is close contact between individuals.

What disease does the virus cause?

As its name implies, FeLV is able to cause neoplasia (‘cancer’) of the white blood cells (‘leukaemia’), but in addition the virus also causes the development of solid tumours (lymphomas) at various sites in the body.

Although the development of neoplasia/cancer is one common outcome in a cat infected with FeLV, more often other diseases develop. In many cats, FeLV infection results in a profound suppression of the immune system leading to increased susceptibility to a wide range of secondary infections that would not cause a problem in normal healthy cats. A variety of clinical signs of chronic and/or recurrent disease develop in these cats, and there may be a progressive deterioration in their condition over time.

Another common occurrence in FeLV-infected cats is the development of a profound and life-threatening anaemia. A variety of other FeLV-related diseases are also seen on occasions including abortion, severe enteritis (causing diarrhoea), neurological (nervous) signs, and ocular (eye) disease.

Through a variety of different ways, persistent infection with FeLV is thus an important disease of cats. It is frequently a fatal disease, and studies have shown that around 80-90% of persistently FeLV-infected cats will die within 3 1/2 years of the diagnosis being made.

How is the virus transmitted?
The virus is fragile and cannot survive longer than a few hours outside the cat in the environment, so direct contact between cats is the way in which infection is transmitted. A cat that is permanently infected with FeLV sheds a large quantity of the virus in saliva, as well as other body secretions and excretions such as urine and faeces. However, FeLV is not a highly contagious virus, and so it generally takes a prolonged period of close contact between cats, involving activities such as mutual grooming, and sharing of litter trays and food bowls for sufficient exposure to the virus to allow transmission to a susceptible cat.

Another potential source of infection is when a queen who is infected with FeLV is mated and gives birth to a litter of kittens. In this situation all the kittens will be born infected with the virus. However, this is uncommon as infection with FeLV frequently causes a queen to become infertile or results in pre-natal death of the kittens with abortion or resorption of the foetuses.

**What happens when a cat is exposed to FeLV?**

Not all cats exposed to FeLV will develop persistent infections and thus go on to develop FeLV-related diseases. Many cats are able to mount an immune response to the virus which is ultimately successful in eliminating the virus from the body. However these FeLV-recovered cats will sometimes experience a transient infection with the virus, and there may be a period of several weeks or months during which the virus remains dormant in the body (‘latent infections’) while the immune response is finally eliminating it completely.

Although cats even transiently infected with FeLV can sometimes subsequently develop disease as a result of this infection, it is only cats that are persistently infected with FeLV that are at a high risk of developing FeLV-related disease. Furthermore, it is the permanently infected cats that are responsible for the transmission of FeLV to other cats.

**How can FeLV infection be diagnosed?**

Diagnosis of FeLV infection is relatively simple. A rapid blood test can be performed which is able to detect proteins of the FeLV virus in the blood of an infected cat. In general this blood test is very reliable although occasionally a misleading result can be obtained. In some situations it may therefore be necessary to confirm infection with the virus through further blood testing at a specialist laboratory where more sophisticated tests are available.

Additionally, some cats with a transient FeLV infection will be transiently positive on the blood test, and therefore a second test performed around 8-12 weeks after the first test may be required to confirm persistent infection.
Is there any treatment for FeLV infection?

There is currently no specific treatment for FeLV infected cats (no treatment that is able to eliminate the virus from the body). However, although most FeLV-infected cats will eventually die of their infection (or have to be euthanased), many will respond to symptomatic treatment, at least for a period of time. For example, if FeLV is causing disease in an individual through immunosuppression and the development of secondary infections, these other concurrent diseases may be treatable leading to improvement of the clinical signs.

How can infection be prevented?

Vaccines are now available to protect cats against FeLV infection and their use is recommended in any cat that has contact with other potentially infected cats. As with other vaccines, an initial course of two injections is required, and annual boosters are necessary to maintain immunity.

Although vaccination is very helpful in controlling FeLV and preventing infection, it is not 100% reliable and therefore it is important not to deliberately expose a vaccinated cat to FeLV, for example by allowing it to mix or housing it with a known infected cat.

In larger colonies of cats, such as breeding households, it is possible to prevent FeLV infection by blood testing. If all the cats in the house are FeLV negative, and they are kept confined (not allowed to wander freely outside), exposure to the virus can be prevented by ensuring that any new cat coming in to the house is also tested and negative for FeLV. Fortunately, vaccinating a cat does not interfere with the blood test for FeLV.