



Feline upper respiratory tract disease - cat flu

Cat flu is a common cat disease that can be life-threatening. Symptoms include sneezing, nasal discharge, conjunctivitis (inflammation of the lining of the eyes), discharge from the eyes, loss of appetite, fever and depression. Occasionally, mouth and eye ulcers and excessive drooling of saliva may be seen. The very young, very old and immunosuppressed cats are more likely to develop severe disease and possibly die as a result of their flu. Where death occurs this is usually because of secondary infections (infections with bacteria in addition to the flu viruses), lack of nutrition and dehydration.

Who is at risk?

Cat flu is most commonly seen in situations where cats are kept in large groups such as breeding catteries, rescue centres and feral cat colonies, although it can also be seen in pet cat households.

Cats most at risk include unvaccinated cats, kittens, the elderly and cats which are immunosuppressed for any reason. In immunosuppressed cats, damage to the immune system has left them vulnerable to a wide variety of diseases with which they would otherwise be able to cope. Immunosuppression can be seen in cats infected with **feline leukaemia virus** (FeLV) or **feline immunodeficiency virus** (FIV), cats with other severe illnesses, or in those receiving treatment with certain medications such as corticosteroids or anti-cancer therapy.

Although vaccination helps to reduce the risk of cat flu, this disease can still be seen in vaccinated cats.

Causes and symptoms

The symptoms of cat flu are most frequently caused by infection with one or both of the cat flu viruses - feline herpesvirus (formerly known as feline rhinotracheitis virus) and feline calicivirus.

Feline herpesvirus (FHV) infection often causes severe and potentially life-threatening illness. Although the majority of cats infected make a full recovery, this often takes several weeks and some cats are left with permanent effects of infection such as chronic rhinitis. Cats with chronic rhinitis are usually well in themselves but have a persistent discharge from the nose and sneeze. Secondary bacterial infection of damaged tissue can cause chronic conjunctivitis, sinusitis and bronchitis (inflammation of the linings of the eye, sinuses and air passages). Antibiotic treatment usually only provides temporary relief of these symptoms.

Feline calicivirus (FCV) infection usually causes a milder form of cat flu with less dramatic nasal discharges. Characteristic mouth ulcers are sometimes the only sign of infection. The ulcers may be present on the tongue, on the roof of the mouth or the nose.

Some strains of FCV cause lameness and fever in young kittens (these can occasionally be seen after vaccination). Affected cats recover over a few days although they may need pain killers through this time. More recently more virulent strains of FCV have been identified in the USA and UK. Among other clinical signs these strains often cause severe swelling of the face and paws, skin ulcerations on the head and limbs, and jaundice (yellow gums and skin). They have deleterious effects on the whole body with a high mortality rate (up to 67%). Further investigations into these strains are currently ongoing.

Diagnosis and treatment

Diagnosis by the veterinary surgeon is based on symptoms and laboratory tests. Testing for flu viruses requires taking a mouth or eye swab which is then sent to a specialised laboratory where the virus is grown and identified.

Unfortunately there are currently no drugs available to kill these viruses so treatment is aimed at supporting the cat through its illness. This treatment includes antibiotics, to treat any secondary bacterial infections as these can be life-threatening, and drugs to help loosen the nasal discharge and make breathing less of a struggle. As cats with flu are often reluctant to eat, they may need to be tempted by offering gently warmed, smelly and palatable food. Syringe feeding of liquid food can be tried if necessary, although caution is advised. Severely ill cats may require hospitalisation for feeding by a tube placed down their nose or directly into their stomach.

Interferon, a compound that interferes with virus replication, has received a lot of attention recently in the treatment of many viral infections. Recombinant Feline Omega Interferon is the first veterinary interferon available on the European market and has antiviral and immunomodulatory properties. To date there is little documented evidence for its success in cats for the treatment of FHV and/or FCV.

Trifluorothymidine is an anti-viral eye drop that is a licensed human product that has been used with some success in cats with severe eye lesions as a result of FHV infection.

Fanciclovir and aciclovir, drugs given in human herpesvirus infections, have also shown some good activity against FHV.

Dehydrated cats may also need fluids given intravenously via a drip. General nursing is also essential. Discharge around the eyes and nose should be gently wiped away using a damp piece of cotton wool and the cat should be kept warm and comfortable.

Carriers

Most cats that recover from cat flu become 'carriers'. Carrier cats usually show no sign of illness themselves but, by shedding virus in their saliva, tears and nasal secretions, are a source of infection to other cats. FHV carriers shed virus in their secretions intermittently. Shedding tends to occur following times of stress, such as a stay in a boarding cattery, and may or may not cause some recurrence of flu signs such as sneezing and nasal discharge in the carrier cat. Treatment for other diseases using corticosteroids may also precipitate an episode of virus shedding. Cats that are FHV carriers remain so for the rest of their life. In contrast, most cats infected with FCV shed the virus continuously for a short time after recovering from flu and then virus shedding stops. In a few cats FCV shedding continues for several years.

Spread

Cat flu viruses are spread in three ways.

- Direct contact with an infected cat showing signs of flu.
- From contact with virus carried on clothing, food bowls and other objects. Large amounts of virus are present in the saliva, tears and nasal discharges of cats with flu. The virus is able to survive in the environment for up to a week.
- From contact with a cat that is a carrier of cat flu. Breeding carrier cats are a risk to their kittens as the stress of kitting may precipitate shedding of FHV and infection of the kittens with either FHV or FCV may occur before the kittens are old enough to be vaccinated.

Prevention

The risk of developing cat flu can be reduced by regular vaccination against FHV and FCV. These vaccines stimulate the cat's immune system helping it to fight infection and protect it from developing disease. However, although vaccination usually prevents severe disease developing, they are not always 100% effective against preventing infection and mild disease may still occur in some cats. FCV has several different strains and work is still ongoing to develop more effective vaccines. Recently some newer vaccines have been marketed, which include cover against some of these more recently recognised strains.

It is advisable to vaccinate all household cats, especially if the cat goes outdoors, stays in a cattery or goes to cat shows. If an individual develops cat flu, subsequent stress, such as attending a cat show, should ideally be avoided.

Breeding cats should be vaccinated before they are mated so that they produce high levels of antibody in their milk. These maternal antibodies only protect the kittens until they are about 4 - 8 weeks old, after which the levels of antibody gradually disappear. Kittens can only be vaccinated successfully when the levels of antibody have disappeared at between 6 and 12 weeks of age.

Cats that recover from infection with FHV or FCV may be able to resist future infections (be immune) for up to a year or more. As there are many strains of FCV, a cat that recovers from infection with one FCV strain can still subsequently be infected with another. Vaccines use strains of FCV which give the most cross-protection to other strains, to try to provide as broad a protection as possible against this infection. This is not an issue with FHV as only one virus strain exists.

Barrier nursing

Preventing the spread of infection in a multi-cat environment involves 'barrier nursing' of infected cats. The infected cat should be isolated from the other cats, for example kept in one room of the house, where it can be treated without the risk of spread of virus to other cats in the household. Separate food bowls and litter trays should be used for this

cat. These should be disinfected with a product which kills the virus but is safe to cats, as recommended by a veterinary surgeon. In a cattery, one person should look after the ill cat, and they should disinfect their face and hands and change their clothes or overalls when leaving the cat in isolation. If one person cares for all the cats, the infected cat should be handled last of all the cats in the home.

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