



Feline Viral Infections

Disclaimer: This is meant to be a reference guide only, and is not to be treated as medical advice. The information presented herein is not exhaustive or prescriptive; readers are strongly advised to seek medical and professional help for their pets.

Curated by: Bangalore Cat Squad

Kittens are as delicate as they look and need looking after by their mothers, who will provide them the milk from which they derive essential nutrition and immunity in the early weeks. However, a lot of kittens that are rescued tend to have lost their mothers, been abandoned or have been rescued from unsanitary conditions, varying states of injuries or found in poor health itself.

As rescuers, fosters and cat parents, it is important to watch out for the early signs and symptoms of the common illnesses that could be afflicting your kittens or cats.

Some of the most common infections or health problems to watch out for:

Feline Panleukopenia Virus (FPV)

The Panleukopenia virus is a species of the parvovirus group and is a highly contagious viral disease in cats. Kittens, who do not have fully-formed immunity, are the most susceptible to this virus. This virus infects and kills cells that are rapidly growing and dividing, such as those in the bone marrow, intestines and the developing fetus.

Who is susceptible to FPV?

FPV is everywhere in the environment and almost all cats and kittens have been exposed to this virus at some point in their lives. While cats of any age can be infected, kittens that are young, sick or unvaccinated are at the highest risk of being affected. Kittens between the age of 3-5 months are most susceptible, with death from FPV also happening more frequently at this age.

How does this infection spread?

The virus is shed in the feces, urine and nasal secretions of cats and can spread to other cats who come in contact with these secretions. It can also spread from fleas that were hosted by an infected cat. However, this is a fairly stubborn virus which can survive up to a year in the environment. This means that a cat can contract the virus without ever coming in contact with the infected cat.

How can I eliminate or kill this virus?

This virus is particularly difficult to destroy and is resistant to a lot of disinfectants. Some surfaces like tiled floors and metal can be disinfected using accelerated hydrogen peroxide but the bedding, food dishes, cages etc. that were used by the infected cat need to be put away or disposed as they will continue to harbor the virus.

What are the common symptoms of FPV?

The symptoms for FPV can be common to several other feline diseases but the first visible signs you should watch out for:

- Loss of appetite
- High fever
- Depression (lesser activity and playtime than usual)
- Lethargy
- Vomiting
- Severe Diarrhea, with or without blood
- Nasal Discharge
- Dehydration
- Hunger and thirst with an inability to eat or drink (kittens will sit in front of their water bowls for extended periods of time, but do not drink)
- Froth or wetness around the lips

If your kitten is showing these or any other unusual signs, take them to the Vet immediately. In FPV cases, the earlier the treatment, the higher the chances of survival. If not treated in the early stages, the virus can also damage the brain and eyes.

A vet will conduct a PCR panel (polymerase chain reaction) which typically looks for:

- FeLV (Feline Leukemia Virus)
- FIV (Feline Infectious Peritonitis)
- FIP (Feline Immunodeficiency Virus)
- Mycoplasma (bacteria that infects red blood cells)

The Vet can also conduct an immediate snap test for FPV (much like a home pregnancy test) but this can lead to false negatives, and it's better to supplement with a PCR panel.

Treatment

The likelihood for survival is very low for kittens below the age of 8 weeks whereas older cats have a greater chance of recovery if timely treatment is provided.

There are no medicines for killing the virus and the vets/clinics are likely to follow a typical Anti-Viral therapy as they would for other viral infections. Treatment will focus on:

- Correcting dehydration
- Providing nutrition

- Antibiotics (these do not kill the virus but are administered to combat the kitten's low immunity and high susceptibility to bacterial infections. Bacteria from the damaged gut may leak into the blood stream)
- In rare and severe cases, a blood transfusion might be called for. This is generally used only in emergency cases; there is a danger of blood transfusions being rejected and leading to sudden death

Seeing your kitten suffer can be extremely distressing and the treatment can sound confusing and overwhelming. Provided below are some of the most common medicines administered in the treatment and should help you navigate the jargon if such a situation occurs.

Don't hesitate to cross-examine every drug with the treating doctor; this will give you confidence on the progress and help you be involved in the process of treatment as well.

Doctors and clinics will differ in their treatment approaches. This list is not meant to be exhaustive or prescriptive.

1. **Doxycycline**

Is a broad-spectrum antibiotic that destroys a wide range of bacterial and parasitic infections. Your kitten is going to need an antibiotic as it is very susceptible to bacterial infections when infected with FPV.

2. **Ranitidine**

Is an antacid, which the kitten will need since they are receiving several medications and will experience gastrointestinal distress

3. **B Complex**

This is commonly administered in FPV cases to prevent thiamine deficiency

4. **IV drips**

To prevent dehydration

5. **Ondansetron**

Will be administered to prevent nausea and vomiting that could be caused by all the medications

6. **Metronidazole**

Is also an antibiotic and anti-protozoal

7. **Prednisolone**

Is a steroid medication used to treat some types of allergies, inflammatory conditions, autoimmune disorders and cancers.

8. **Enrofloxacin**

Is an antibiotic used for animals

9. **Ceftriaxone + Sulbactum injection**

Ceftriaxone is an antibiotic which prevents the formation of the protective covering of bacteria. Sulbactum enhances the activity of Ceftriaxone against bacteria.

10. **Filgrastim Injection**

Is a medication to treat low Neutrophil count. It may also be used to increase white blood cells.

11. Oralade GI Support

Is a rehydration drink since Dehydration occurs in this infection due to diarrhea and vomiting.

12. Botropase

Due to constant injections and IVs, vets may administer this to control bleeding and speed up the blood clotting process.

13. G/I food

FPV affects the gastrointestinal tract and its complications lead to malnutrition and anemia. During treatment, as well as for a week in recovery, it is important that the kitten receive meals that are vet-prescribed and specially intended for digestive care.

Some of the popular brands that you might find recommended to you are Hill's Gastrointestinal wet food and Calibra Gastrointestinal wet and dry foods.

After Care

Kittens in recovery will still need to be isolated from other cats (if you have other pets) as they will continue to shed the virus for about 20 days to a month. They will typically be prescribed certain supplements in the form of syrups or pastes to keep building nutrition and immunity.

It is recommended that a CBC (complete blood count) report be periodically conducted, especially if the kitten is slow to recover or is showing new or unusual symptoms, to see if any specific treatment is required e.g. electrolyte imbalance, low RBC count etc.

Complications

1. Secondary Infections

FPV depletes the white blood cell count which leaves kittens susceptible to secondary infections. Therefore, keep an eye out for any signs of infections – fur loss, bleeding, vomiting, diarrhea etc. as these can be easily treated.

2. Cerebellar Hypoplasia

A reportedly rare complication of FPV is cerebellar hypoplasia or infection and damage to the central nervous system/brain. This causes head tremors and loss of balance in cats, particularly the hind legs. Before arriving at this prognosis, rule motor imbalances out due to inner ear infections (ear mites), electrolyte imbalances and feline diabetes.

Frequently Asked Questions (FAQs)

Are Feline parvovirus and canine parvovirus the same?

Though the names are similar, they are not the same virus.

Can I contract FPV from my kitten?

FPV is not a zoonotic diseases i.e. animal-to-human transmission of the virus does not occur.

Can FPV be prevented?

Timely vaccination for your kittens can prevent an infection. There is no cure for FPV and the best course of action in case of an infection is aggressive antiviral therapy. Cats that survive FPV develop immunity for life.

How long can FPV survive in the environment?

Though an affected kitten will stop shedding the virus after a month, the virus can survive on surfaces for up to a year. It can be inactivated using a disinfectant this will be a laborious process and not 100% effective. All the clothes, dishes and bedding should be thrown out. Whatever can be washed at high temperatures should be washed e.g. your own clothes.

Upper Respiratory Infections

These infections include viruses such as Rhinotracheitis aka Feline Herpes Virus and Feline Calicivirus. These 2 viruses are responsible for approximately 90% of respiratory infections in cats. The main viruses and bacteria that cause URI in cats are highly contagious. An infected cat will shed contagious particles in their saliva or the secretions from nose and eyes.

How does this infection spread?

Most cats contract the virus through direct contact with other cats, since the viruses and bacteria can survive only for a short time in the environment – herpes virus can survive up to 18 hours outside the body, and calicivirus can live up to 10 days.

Common Symptoms of URI

- Sneezing, nasal congestion
- Conjunctivitis
- Discharges from nose or eyes

Less common symptoms

- Anorexia
- Lethargy
- Fever
- Enlarged lymph nodes
- Difficulty in breathing
- Squinting

Treatment

Most cats with uncomplicated cases of URI can be treated at home. For severe cases, vets will provide medical therapy. They may also prescribe topical eye medication in case of eye discharge. To avoid secondary infections, certain antibiotics may also be prescribed. Cats with nasal congestion can be placed in humid environments such as a steamy bathroom for 10-15 minutes daily. For excessive discharge, nose drops will be advised.

Sometimes, cats can lose their sense of smell due to the respiratory infection, due to which they have a decreased appetite. In such cases, tempt them with strong smelling canned foods or let the Vet prescribe an appetite stimulant. Most cases of URI last for 7 to 10 days.

Frequently Asked Questions (FAQs)

How can this disease be prevented?

Since the disease can be caused by several disease agents, it is not always possible to prevent. However, the standard 'core' vaccines for kittens and cats provide protection against feline viral rhinotracheitis and feline calicivirus.

Are my other cats at risk for infection?

A cat that has an acute upper respiratory infection will be infective to other cats during the incubation period and for up to 3 weeks after developing symptoms. A cat that is a carrier of an upper respiratory virus may always be infective to other cats.

Cats that are unvaccinated, are young, or have chronic underlying problems are more susceptible, and may develop a serious illness. Adult cats that have been adequately vaccinated will likely only develop a mild case of illness, which may resolve without treatment.

Am I at risk of contracting URI from my cat?

These infections are zoonotic in extremely rare cases. Most of the URI diseases in cats do not pose any threat to humans, with the exception of *Bordetella bronchiseptica* which in rare cases can cause illness in people with immune system disease. If you develop any signs like a runny nose or watery eyes while the cat is ill, consult your physician.

Fading Kitten Syndrome (FKS)

Fading kitten syndrome is another name for the death of neonatal kittens. It is a group of symptoms rather than a single disease. As foster parents of mother cats and their kittens, you are likely to encounter such cases, the symptoms of which appear shortly after birth, or as late as 6 to 8 weeks. There is no known single cause, though the poor health of the mother cat does have a strong correlation.

Common Symptoms

- Low body temperature – kitten feels cool or cold to the touch
- Extreme Lethargy – not responding when called, unable to stand or move
- Gasping for breath
- Meowing/crying

Action Plan

IMMEDIATELY, AT HOME

1. Get them warm

- Use the burrito method and wrap them warmly, with only the face exposed. Don't remove them to keep checking on them; this will make them cold again every time you do this

- Use a covered heating pad around the kitten as an extra source of heat. Remember, you are not a source of heat since your own body temperature is lower than a cat's.

2. Raise their blood sugar

- Sugar sources: warm sugar syrup, corn syrup
- Provide drops every 3 minutes
- If the kitten is not swallowing, try rubbing it on their gums and tongue
- Be CLEAN. Do not contaminate the syringes and droppers by double dipping

Once the kitten is stable, bring the kitten to a vet for a temperature check and fluids. Giving them immediate attention before rushing them to a vet is their best chance for survival.

It is possible that even with all efforts and medical care, the kitten might not survive. Kittens can fade very quickly, in a span of hours sometimes, but they are worth fighting for in every single case.

Feline Immunodeficiency Virus (FIV) & Feline Leukaemia Virus (FeLV)

FIV and FeLV are both from the same family of retroviruses but from different groups. FIV comes from a group called lentiviruses – those that cause lifelong infections that progress over life. FeLV is a gamma virus, which has the potential to cause cancerous changes in cells they infect.

FIV

FIV is similar to the Human immunodeficiency virus (HIV). However, FIV does not infect humans and HIV does not infect cats.

How does FIV spread?

The virus is present in the blood, saliva and other bodily fluids of cats. It can barely survive outside of the host's body and therefore does not transfer easily from one cat to another through hands or clothes. Cats primarily pick up the infection through fighting aka bite wounds, or through mating behaviour. It can also be passed from an infected female cat to her kittens.

Do infected cats become permanently infected?

Once a cat has FIV, they will be FIV positive for the rest of their lives.

What are the common symptoms indicative of FIV?

There is an incubation period of several months to even years before signs of an infection show in a seemingly healthy cat. Many infected cats can die from something else entirely before their FIV infection even surfaces. Signs of FIV stem from a generally weakened immune system and therefore a susceptibility to various infections.

Common Symptoms

- Becoming repeatedly ill e.g. cat flu, sore gums, skin diseases, stomach upsets
- Seeming “off-color” or fever
- Weight loss
- Tumours

How to test for FIV?

Vets can perform a simple blood test or PCR panel to determine if the kitten has contracted FIV. Kittens less than 6 months old may have the antibodies passed down to them from their mother, but may not have the virus itself. Therefore, it is important to confirm a positive test result using another laboratory test from another lab or clinic.

Treatment

There is no reliable treatment for FIV as it is not possible to predict if or when the signs will manifest. Each Vet will treat the case differently on a case-to-case basis. Depending on what signs develop, treatment could be along the lines of:

- Antibiotics or anti-inflammatory drugs
- Anti-viral drugs
- Prescribed diets, vaccinations and treatments against fleas and worms – this will prevent secondary infections and also prevent spread of FIV to other cats

Frequently Asked Questions (FAQs)

Can I protect my cat against FIV?

There is no vaccine against FIV but you can reduce the chances of your cat contracting FIV through fighting, by having them neutered. Non-neutered cats tend to be territorial and pick fights with other cats, leading to higher chances of getting infected. Ideally, ensure your cat is a complete indoors cat.

Can I get FIV from my cat?

No. FIV is not zoonotic i.e. it is non-transferrable to humans.

Can I put my FIV-positive cat in a boarding facility?

Most boarding facilities should be able to accept FIV +ve cats as long as they are not showing any signs of infectious diseases. Very close and aggressive contact is required between cats for transmission to occur. The virus is easily killed by disinfectants and can barely survive outside the body – simple precautions like routine cleaning will go a long way in preventing spread if the boarding house keeps cats separately.

However, the immune system of FIV cats is compromised and they are at greater risk of contracting secondary infections at a boarding than FIV negative cats.

FeLV

How does FeLV spread?

This virus is transmitted through direct contact with the saliva of infected cats- usually through sharing of food bowls, grooming one another or through mating behaviour. It can also be transmitted through the mother while the kittens are in the womb, or through the mother's milk.

Symptoms of FeLV infection

There is an incubation period of several months to years before an infection will show signs. Unfortunately, 80% of infected cats will die within 3 years.

- Recurrent infections e.g. respiratory infections, sore gums, digestive problems
- Being "off-colour" or having high temperatures
- Enlarged lymph nodes which will often be cancerous e.g. internally or around throat, armpit, groin or knee regions
- Severe anemia
- Slow recovery time from infections
- Development of cancers

How to Diagnose FeLV?

This can be easily diagnosed using a PCR panel. It is recommended that all positive tests be sent to another lab for cross-examination to avoid false positives.

Treatment

There is no reliable treatment for FeLV and vets will treat them on a case-to-case basis. Infected cats should be kept indoors to protect them from secondary infections that might develop, as well as protect other cats from contracting the virus.

Frequently Asked Questions (FAQs)

Can I protect my cat against FeLV?

There are vaccinations available to protect unvaccinated cats against FeLV. However, if a cat has already been infected, the vaccine will not be of use. Please take your cat for annual boosters to maintain their protection against this disease and control the spread.

My cat died from FeLV. Can I get another cat?

The virus does not survive for long in the environment so it is safe to bring a new cat into your house after 24 hours. Do disinfect any food bowls, litter boxes and other items used by the FeLV +ve cat to be safe. If you already have other cats, get them tested as well for the virus before introducing more cats into your home.

Feline Coronavirus (FCoV) & Feline Infectious Peritonitis (FIP)

FCoV is a common and contagious virus that can be found in most cats and is passed through their faeces. Nearly every cat that comes in contact with this virus will become infected and most will remain healthy and clear the virus themselves. Most cats will not show signs, though some can get diarrhoea for a few days. Such cats will shed the virus in their faeces for a few months and remain healthy.

FIP is an uncommon and fatal viral disease, caused by a mutated FCoV (feline coronavirus). This disease is most common in kittens between 6 weeks to 2 years of age.

In a very small percentage of cats, the virus mutates and causes a fatal disease called feline infectious peritonitis or FIP.

Signs of FIP

There are no unique signs to FIP and can vary from cat to cat. Almost all infected cats will show symptoms of fever, lethargy and loss of appetite. However, there are 2 types to this disease:

- 1. Wet FIP** – Fluids build up in the abdomen, causing the abdomen to look swollen. This build up can also happen in the chest activity leading to breathing problems for the cat.
- 2. Dry FIP** – very little fluid build-up but cat can appear lethargic, with a poor appetite and high temperature. They could lose weight, present vision problems and possibly develop jaundice

How is FIP diagnosed?

There is no single test that can diagnose FIP and medical professional will often rely on multiple sources of information e.g. blood tests, medical history, testing the fluid in abdomen or chest etc. The only definitive way to confirm an FIP diagnosis is through biopsies.

Treatment

Unfortunately, there is no treatment for FIP and it is fatal in 95% of the cases. In mild cases of the dry form, it is possible to prolong the survival period, but most cats with the wet form of the disease will die within 2 months of the onset of the disease. Thankfully, FIP is extremely rare.

Frequently Asked Questions (FAQs)

How long does the FIP virus survive in the environment?

The virus can survive for a few hours to days in the outdoors. Indoor, in the cat's dried-up litter, it can survive for up to 7 weeks. It can be destroyed with most disinfectants and you should use those that are not toxic to cats.

One of my cats is diagnosed with FIP. Should I isolate them from the others?

It is highly likely that the other cats have already contracted FCoV but are at no more risk of developing FIP. However, continue to maintain litter hygiene and encourage cats to use their own litter boxes.

If a cat recovers from FCoV and doesn't develop FIP, is it immune?

Unfortunately, a cat can be re-infected by FCoV which can then mutate into FIP.

Why does FCoV mutate to FIP in some cats?

There is no exact understanding of how this mutation occurs, but there are some factors that increase its likelihood:

- Stress e.g. moving homes, introduction of new pets, being placed in a boarding facility etc.
- Age – very young and very old cats are susceptible
- Poor immune system
- Possible genetic factors

My cat died of FIP. When can I get another cat?

If it was your only cat, it is probably safe to get another cat after 6 weeks. Disinfect the litter tray, food bowls and other surrounding areas with bleach before bringing another cat in.

If you already have other cats, then they too could pose a risk to the new, incoming cat. Speak to your vet about the best time to get another cat and closely monitor the health of the cats already at home.

Remember

Sometimes, in spite of the best medical attention and your love, some cats and kittens do not make it. Some of these diseases have an extremely high mortality rate and some do not even have cures.

Losing a pet, rescue or foster can be very painful and overwhelming. Take the time grieve your loss and don't be afraid to feel. Reach out to your BCS community for strength and support.

Remember that with you, they were not alone, had someone to fight for their lives and to love them.