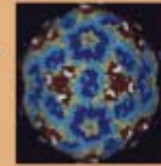


Outbreak: Managing Feline Panleukopenia in a Shelter

Courtney Stateler, DVM 2010
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Background Information

Feline panleukopenia virus (FPLV) is an extremely contagious parvo virus among cats, in which kittens are most severely affected. FPLV can destroy WBCs, which makes the cats susceptible to secondary infections. FPLV is difficult to control because it is stable in the environment and is resistant to common disinfectants used in shelters, such as alcohol and quaternary ammonia compounds. It is, however, susceptible to disinfection by bleach. The primary route of exposure is fecal oral, so adequate disinfection measures are extremely important. Signs of disease in cats include vomiting, diarrhea, dehydration, fever, lethargy, and death. In utero infections do occur, leading to the birth of neurologic kittens.^{1,2,3,7} Vaccination with a MLV vaccine in kittens over 4 weeks of age with boosters at 2-3 weeks, 1 year, then every 3 years is usually adequate in preventing the disease.²

Outbreaks in shelters are due to the presence of young kittens that are relatively immunodeficient with maternal antibody blockage combined with a highly contaminated environment.²

Diagnosis

A crucial aspect in controlling outbreaks in a shelter setting is having trained staff that are capable of recognizing signs of disease and diagnosing FPLV. Staff should be trained to recognize the most common signs of FPLV (such as vomiting, diarrhea, dehydration, birth of neurologic kittens, fever, lethargy and death) and seek confirmation of the disease.^{2,3,7} The shelter veterinarian or contracted veterinarian can help in diagnosis by reviewing clinical signs, performing a parvo snap test,^{4,7} CBC/ blood smear looking for leukopenia (neut: 50-3,000 WBC/ μ l)⁶ or performing necropsy looking for enteritis depending on the financial constraints of the shelter and the necessity to obtain a definitive diagnosis. It is important to note that false negative and false positive (within 5-12 days of FPLV vaccination) results are possible with testing.¹



Picture on left: Cat vomiting. Picture below: Cat with diarrhea. Both are common signs associated with FPLV



It is very important to recognize the clinical signs of FPLV and begin quarantine and treatment protocols immediately

Vaccination Protocols

In order to help protect against feline panleukopenia outbreaks, shelter organizations must not delay in taking any action. An important first step in combating FPLV is vaccinations. Shelters should vaccinate all cats greater than 4 weeks of age without delay upon entry with the subcutaneous MLV vaccine.¹ Inactivated vaccines are a contributing factor to outbreaks because protection is normally delayed for 2-3 weeks after the second vaccination in naive kittens, which leads to exposure and infection before protective immunity can develop.



also be avoided because they paraviral counterparts.² It is vaccinated with the SQ MLV entry into the shelter, or it is almost assured that they will be

exposed to the virus before the vaccine can provide any protection. Cats less than 4 months of age should receive vaccine boosters every two weeks. If the shelter participates in a foster program, all fostered cats should receive a booster 1 week before returning to the shelter. During a FPLV outbreak, pregnant queens should be vaccinated as well, because the risk of her and the kittens contracting the disease outweighs the risk of abortion with vaccination.²

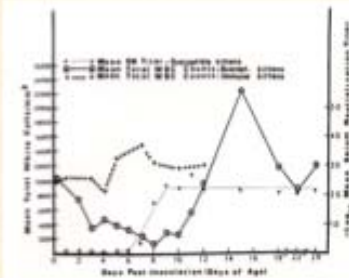


Fig. 1. Comparison of total WBC counts in 12 immune and 21 susceptible newborn kittens after panleukopenia virus infection on the day of birth. Correlation of WBC and immune response in the susceptible newborn kittens.¹

Shelter Sanitation and Environment

There are several ways the shelter can help to reduce the risk of environment spread of FPLV. For control of all disease, it is imperative that the shelter is not crowded, in order to decrease the stress of the cats and to decrease the number of potential infective disease agents present. Shelters should also be set up so that the flow of people traffic is from healthiest to sickest, preferably with multiple entrances and exits so that newly admitted cats and sick cats do not potentially expose healthy cats to FPLV.² The majority of the rest of the recommendations focus on sanitation. First, all transportation carriers used for the cats should be made of metal, since plastic is more difficult to clean, and should be cleaned carefully between each use. Once in the shelter, cats should remain in the same cage throughout their time at the shelter in order to avoid potentially spreading infectious agents (such as FPLV). The cages that the cats are housed in, as well as items such as litter pans, should be made of stainless steel, or some other non-scratchable, non-porous material that can easily be cleaned.² The shelter should have a policy in effect that states that all people, including employees and potential adopters, must wash their hands in between handling each cat. All cat areas and kennels should be cleaned daily or between cats with fresh household bleach in a 1:32 dilution or 6% sodium hypochlorite bleach left on for 10 minutes to ensure disinfection and killing of FPLV.^{2,7} Also, do not forget to disinfect potential fomites such as door knobs, telephones, stethoscopes and other equipment. It is important to note that these precautions cannot be implemented at the onset of clinical signs, and must be practiced vigilantly at all times because FPLV exposure can occur due to shedding of the virus up to three days before the development of clinical signs.²



The photo above shows proper cages for cats in a shelter. The cages, food and water bowls, and litter boxes are all made of stainless steel, which is easy to clean with a bleach solution. The cages also do not open up to each other on the sides, and the fronts of the cages are at least 4 feet away from other cages, which helps decrease spread of pathogens.

Quarantine and Treatment

If there is an isolated incident of FPLV in a shelter that practices appropriate vaccination and sanitation protocols, quarantine may not be necessary; however, in the face of an outbreak or a break in protocol a 14 day quarantine regimen should be implemented,² because the incubation period is generally less than 14 days.¹



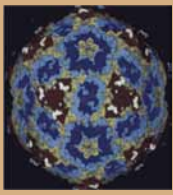
All sick cats should be isolated and treated. All at risk cats may be vaccinated, but it is too late to vaccinate those who are already sick. Supportive treatment involves fluid therapy (Pentastarch), anti-emetics (metoclopramide) and broad spectrum antibiotics.⁷ There are other more extensive treatments (such as transfusions), however these are beyond the financial limitations of most shelters. Nonetheless, there is a poor prognosis associated with cats that have a WBC count of <2,000 / μ l or those with severe septicemia.⁴ All at risk/exposed cats should be isolated to prevent persistent spread of disease. There are several options for quarantine depending on the limitations of the shelter facility and their policies. The cats may be moved into an isolation ward or building for 14 days, placed in foster care for 14 days, or they may be euthanized in order to ensure prevention of spread of the disease.² Special precautions for quarantine include: cleaning supplies and/or staff dedicated specifically for quarantine, protective clothing, shoe covers or foot baths, minimal handling of cats and only attending to quarantine after caring for the healthy animals back in the main part of the shelter.^{2,7} Cat intake and return from foster care should be delayed until the outbreak is under control.²

Summary

- Vaccinate ALL cats with subcutaneous MLV panleukopenia vaccine upon arrival to the shelter
- Train all staff to recognize the signs of FPLV (such as vomiting, diarrhea, dehydration, and death)
- Do not move the cats around to different parts of the shelter
- Maintain a high level of sanitation- clean everything with fresh bleach and wash hands between each cat
- If facilities permit it, impose a 14 day quarantine at the first signs of a FPLV outbreak

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Picture on left: Cat vomiting. Picture on right: Cat with diarrhea. Both are common signs associated with FPLV. It is very important to recognize the clinical signs of FPLV and begin quarantine and treatment protocols immediately

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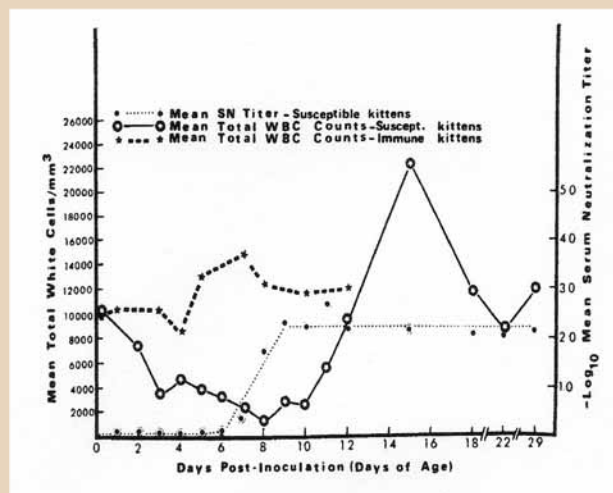


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