Panleuk Basics

Understanding, preventing, and managing feline parvovirus infections in animal shelters





Your Presenter



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Feline Panleukopenia

Caused by a feline parvovirus (FPV):

- Non-enveloped DNA virus
- Closely related to canine parvo (CPV)

Important features:

- Highly contagious, easily spread, environmentally resilient virus
- Stable, single strain virus





Who gets Panleuk?

• ANY unvaccinated cat of any age



- Kittens, co-infected cats most susceptible to disease
- Cases occur all year long with higher rates in spring/summer months



FPV Transmission

Spread mainly through feces, also vomit and other excretions

- Direct contact
- Fomites & environmental contamination
- Mechanical, vector transmission



Highly resistant in the environment – up to a year

• Sanitation with parvocidal products is critical!



FPV Transmission

Incubation period:

- Reported from 2-14 days
- 5-7 days most common

Viral shedding (contagious to other cats):

- Up to 2-3 days before clinical signs
- Weeks following recovery



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Management challenge:

May be contagious before symptoms start and for a period of time after they resolve



What happens when they get sick?

- Virus attacks rapidly dividing cells
 - Vomiting, diarrhea, dehydration & electrolyte problems from damage to intestinal cells
 - Decreased ability to fight infection from bone marrow damage



Clinical Signs of FPV Infection

Symptoms usually develop 5-7 days after exposure, but range is 2-14 days:

- Vomiting
- Depression
- Diarrhea
- Inappetance
- Dehydration
- Lethargy, weakness
- Sudden death





Clinical Signs of FPV Infection

Subclinical disease

- Probably relatively common
- Adult immunocompetent cats
- Partial immunity

Severity influenced by:

- Age
- Immune status
- Concurrent infections





Cerebellar Hypoplasia

- Infection of the queen in late pregnancy or very young neonates to ~1 week old:
 - Non-progressive ataxia noticed at 2-3 wks old
 - Other neuro or signs less reported





Diagnosis

Consistent symptoms and history

In-house parvo tests

- Look for viral antigen in the feces dog tests work for cats
- False (+) or (-) results possible
- Interference from recent vaccination possible but unlikely









Diagnosis



Complete blood count or smear

- At $10x \rightarrow 4-6$ WBCs per field or less
- At $40x \rightarrow 1-3$ WBCs per field or less

Caveat: not every cat will develop leukopenia

http://todaysveterinarypractice.navc.com/in-clinic-hematology-the-blood-film-review/ https://www.cliniciansbrief.com/article/blood-smear-preparation



Diagnosis

- Always necropsy cats that die in the cage
- Segmental enteritis is classic finding on gross exam
- Parvo test can still be used
- Samples for molecular testing and histopath



Image from Greene's Infectious Diseases of the Dog and Cat



Treatment Considerations





Treatment

Careful consideration necessary when deciding to treat:

- Ability to provide humane level of care
 - Supplies, space/housing, staffing
- Ability to protect the remaining population strict isolation is mandatory
- Retain focus on prevention
- Prognosis and ability to provide necessary level of treatment





Treatment

Treatment is supportive:

- Correct dehydration, hypoglycemia, electrolyte imbalances
- Prevent sepsis
- Address hypoproteinemia
- Stop vomiting, start feeding
- Alleviate pain and discomfort





Prognosis

- Higher mortality rates earlier in the course of treatment
- Typically higher mortality for kittens < 6 months vs. adults
- Tends to be a more protracted course of disease than canine parvo patients





After Treatment...

- Time to recovery depends on severity of clinical signs and form of disease – generally longer than CPV
- Viral shedding usually stops within 2-3 weeks (but can extend to 6 weeks)
- Can SNAP or PCR before returning to general population
- Bathe and dry thoroughly
- Vaccinate as usual
- Rehome ASAP





Preventive Strategies

- Operate within your capacity for care
- Reduce length of stay
- Recognize and respond to illness promptly
- Maintain excellent sanitation procedures
- Follow recommended vaccination protocols



Population Management

• Operating beyond capacity for care is a major risk factor for disease outbreaks



 Longer lengths of stay increase risk of disease exposure







Excellent Sanitation Procedures

- Appropriate techniques and products
 - Product, application, dilution, contact time
- Housing that meets needs
- Dedicated staff
- Labeled, dedicated equipment
- Use PPE when needed
- Minimize risk with order of cleaning
- Diligent hand sanitation
- Restricted access to hard-to-sanitize surfaces/areas







http://www.aspcapro.org/webinar/20170718/shelter-sanitation-2



Panleuk Vaccination

- Panleuk is considered to be a vaccinepreventable disease
- Basic vaccine reminders:
 - Give as close to the time of intake as possible, or before
 - Keep refrigerated
 - Mix fresh before use





Panleuk Vaccination

- FVRCP given at or prior to intake for cats starting at 4-6 weeks of age
 - For adults: one booster 14 days later
 - For kittens: repeat every 14 days until 16-20 weeks old
- Weigh exposure risk vs. vaccination risk
 - Rule of thumb: too sick to vaccinate = too sick to stay in the shelter



http://www.catvets.com/guidelines/practice-guidelines/feline-vaccination-guidelines

Panleuk Vaccination

This is a core vaccine – don't assume they are protected!



DiGangi BA et al. Prevalence of serum antibody titers against feline panleukopenia virus, feline herpesvirus 1, and feline calicivirus in cats entering a Florida animal shelter. J Am Vet Med Assoc. 2012 Nov 15;241(10):1320-1325.



Maternally-derived Antibody Interference

AKA – why kittens need so many vaccines!



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Help! We have Panleuk! Stop the spread! **Diagnose & Isolate** Assess Risk Decontaminate Communicate Document



