

VET 433A Feline Retrovirus Infections

FeLV Clinical Questions

§ How common is FeLV?

- Leading cause of feline mortality
- ~30% of cattery cats
- <3% in suburban and shelter cats
- Prevalence has declined due to testing and vaccination
- Epidemiology: progressive disease is more likely to occur in younger or immunosuppressed cats, the adults are much more resistant

§ What sort of diseases does FeLV cause?

- Lymphoma
- Leukemia
- Myelodysplasia
 - Cytopenia, maturation abnormalities, increased blasts
- Myelofibrosis
 - End-stage marrow failure
- Anemia
- Immunosuppression
- Immune Complex Diseases
- Reproductive Diseases
- Peripheral lymphadenopathy
- Enteritis, Neurologic disease, etc

§ How do cats become infected by FeLV and what is the typical signalment of a cat with FeLV?

How does that compare with FIV?

- FeLV is shed in saliva, they can become infected via allogrooming, shared food/water bowls, and blood transfusions (friendly retrovirus)
- Typical signalment: younger cats, persistently viremic cats die in about 4 years, in a multi-cat household 50% die in 2 years and 80% die in three years
- FIV is transmitted via bite wounds (aggressive retrovirus)

§ How do you diagnose FeLV infection? What are you trying to detect? How good are the tests?

- **Antigen-detection ELISA and IFA**
- ELISA is the first choice for screening and diagnosis
 - Sensitivity and specificity 98%

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- Predictive value problem when prevalence is low (50% chance false positive)
- Quantitative PCR assay
- IFA

§ What should you tell an owner whose healthy cat tests positive for FeLV? Are other cats in the household likely to become infected?

- Retest prior to this to ensure that the test was not a false positive
- Some cats may regress
- Other cats in the household may be infected or immune
- House all cats indoors/catio
- Vaccinate FeLV+ cats as necessary and FVRCP as normal

§ Can you treat FeLV infection?

- Chemotherapy for lymphoma
- Blood transfusions
- Glucocorticoids for immune-mediated dz
- Antimicrobials for secondary infections
- Antivirals +/- have significant drawbacks

§ Is vaccination for FeLV effective?

- Inactive (killed) vaccine
- Nonadjuvanted recombinant canarypox vaccine

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FIV Clinical Questions

§ How common is FIV infection? Can owners catch it from their cats?

- Prevalence in sick cats ~ 13-15%
- Prevalence in healthy cats ~ 2-3%
- O cannot catch this from their cats!

§ What sort of disease does FIV cause?

- FIV targets T helper (CD4+) lymphocytes and later CD8+ cells and B cells
- Tissue macrophages are also targeted
- This results in a gradual destruction of the immune system and promotion of neoplastic disease (less than FeLV)
- Neurologic disease can also be seen
- This process can take years (reason so many cats are geriatric), FIV is NOT a death sentence!
- The degree of viremia during the acute phase may predict the speed of progression, some cats do never develop terminal disease

§ How do cats become infected with FIV and what is the typical signalment of a cat with FIV infection?

- The mean age is 6-8 years, 80% of cats are over the age of 2
- Disease is mostly in adult/geriatric cats
- Transmitted via saliva by biting
- Transplacental transmission depends on strain and degree of maternal viremia
 - Most kittens are likely infected via saliva or milk
 - Indoor housing decreases transmission
- Transient lymphadenopathy, pyrexia, depression, anorexia
- Transient neutropenia and lymphopenia
- URTD, enteritis, stomatitis
- Neurologic signs are rare

Clinical Signs by phase

- Hyperglobulinemia (subclinical phase finding)
- Transient primary illness (lymphadenopathy) in the acute phase
- Terminal Phase
 - Secondary infections
 - Stomatitis, recurrent URTD

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- Diarrhea, weight loss
- Chronic skin disease
- Other opportunistic infections
- Hyperglobulinemia
- Ocular dz
- Neuro signs > one of the more common reasons for euth
- Chronic wasting > one of the more common reasons for euth
- Azotemia due to interstitial nephritis

§ How do you diagnose FIV? What are you trying to detect? How good are the tests?

- **Antibody positive = current infection**
- ELISA assays are most common
- Virus levels are LOW except terminally
- Maternal antibodies can be present up to and including 6 months of age, retest after 6 months to confirm
- Positive test results may be irrelevant to clinical problem
- Negative results may occur
 - Acute phase – retest cats 2+ months later
 - End-stage disease, test with PCR (never as sensitive as antibody tests)

§ What should you tell an owner who's healthy cat tests positive for FIV? Are other cats in the household likely to become infected?

- Their cat may still have a long healthy life
- Other cats may or may not get infected, try to limit any fighting

§ Can you treat FIV infection?

- No good antivirals
- Keep cats indoors
- ID and treat opportunistic infections
- Manage stomatitis
- Vaccinate for other pathogens (FVRCP)

§ Can you vaccinate for FIV infection?

- Inactivated vx used to be available by was ~50% efficacious or less
- Interfered with testing using IDEXX SNAP