

Cytauxzoonosis (*Cytauxzoon felis*) Information

Tests available at VBDDL: Microscopic Slide Review (Blood Smear) and PCR

Cytauxzoonosis, is caused by the parasite, *Cytauxzoon felis*, found in ticks carried by reservoir host bobcats. The majority of cases seen at the NCSU Veterinary Hospital Center (VHC) have come from Pittsboro, Southern Pines, and coastal North Carolina from Morehead City down to the Southport area but pet owners and veterinarians should be aware that these are not the only affected areas. There are two species of ticks that can transmit the infection from bobcats to domestic cats, *Dermacentor variabilis* and *Amblyomma americanum*. *A. americanum* (the Lone Star tick) feeds aggressively on just about any host mammal and has a geographic distribution that has been expanding north and east for the past decade. Some cats naturally survive the infection and can thereafter act as a reservoir leading to the infection of more cats.

Disease (one or more of the following are good reasons to test)

- History of tick attachment
- Lack of energy and appetite,
- Profound fever.
- Icterus (yellow discoloration of skin and whites of the eyes).
- Pancytopenia or bicytopenia, especially in the spring and summer months

Testing

- Examination of blood smear.
- Cytologic examination of infected tissues like lymph nodes, liver, or spleen.
- PCR can confirm infection. Sample type: EDTA whole blood (2mls).

Treatment

Veterinarians have been taught that this disease is 100% fatal with little that can be done. Recently in collaboration with the University of Missouri, NC State clinicians performed a clinical trial evaluating a new treatment using atovaquone (15 mg/kg PO q8h) and azithromycin (10 mg/kg PO q24h) that showed survival rates approaching 85%.

Prevention

The best protection against Cytauxzoonosis is to keep cats indoors and use acaricide treatments approved to kill ticks on cats (Note: some canine products can be toxic to cats). The use of anti-tick products alone may not guarantee the prevention of infection.

Insights gained from VBDDL associated research. (see pg 2)

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- Read the latest at the NCSU Abstract blog at <http://web.ncsu.edu/abstract/miscellaneous/tp-uptick/>
- Control/click to see link [VHC Warns of Tick-Transmitted Disease Danger to Cats](#)

- Initial description of the demographic and clinical characteristics of feline cytauxzoonosis in a retrospective study of 34 *C.felis* infected cats. Pancytopenia and icterus were the most common clinicopathologic abnormalities. Thirty-two cats either died or were euthanized, and 2 cats survived. Data indicated that veterinarians in the mid-Atlantic region of the United States should consider *C felis* infection in cats that become ill with fever, icterus, and pancytopenia or bicytopenia, especially in the spring and summer months. Published article: Birkenheuer A.J., Le J.A., Valenzisi A.M., Tucker M.D., Levy M.G., Breitschwerdt E.B. (2006). "Cytauxzoon felis in cats in the mid-Atlantic states: 34 cases (1998-2004)". *Journal of the American Veterinary Medical Association* **228** (4): 568–571.

- “An open-label, randomized prospective study compared survival in cats treated with atovaquone (15 mg/kg PO q8h) and azithromycin (10 mg/kg PO q24h) or imidocarb (3.5 mg/kg IM). Of 53 cats treated with A&A, 32 (60%) survived to discharge while only 7 of 27 cats (26%) treated with imidocarb survived ($P=.0036$; odds ratio 7.2, 95% CI 2.2, 24). Cats with a lower parasitemia were more likely to survive, as were cats with higher white blood cell counts and lower total bilirubin.” “We are very excited about the results of the clinical trial, but this is still a very serious illness that often requires a week or more of hospitalization, but after treatment these cats return to live a completely normal life,” says Dr. Birkenheuer. “In fact they seem immune to re-infection after recovery.” Published article: Cohn, L.A., Birkenheuer, A.J., Brunker, J.D., Ratcliff, E.R. and Craig, A.W. (2011), Efficacy of Atovaquone and Azithromycin or Imidocarb Dipropionate in Cats with Acute Cytauxzoonosis. *Journal of Veterinary Internal Medicine*, 25: 55–60. doi: 10.1111/j.1939-1676.2010.0646.x