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OCTOBER 2012
FELINE INFECTIOUS DISEASE – BARTONELLA
2 PAGES

What is it? *Bartonella* species are bacterial pathogens, classified as aerobic gram negative motile rods. They have the ability to adhere to vascular endothelium as well as blood cells, and are therefore capable of widespread disbursement throughout the body. Cytokine reaction to *Bartonella* results in a lymphoplasmacytic inflammation. Several species are known to infect cats, with ***Bartonella henselae*** being the most common. This species is responsible for "Cat Scratch Fever" in humans. Cats are thought to be the primary reservoir of this organism, with transmission between individuals occurring via flea bite. Once infected, cats develop a cyclic bacteremia. Note that **Hemobartonellosis**, or feline infectious anemia, is a different distinct disease process from **Bartonellosis** and is caused by mycoplasmal type organisms.

Clinical Signs: Vague clinical signs including **lymphadenopathy, anorexia, lethargy and fever**. Few display neurological abnormalities which may include nystagmus, tremors, myalgia and focal seizure activity. The vast **majorities** of cats which appear to have been naturally infected ***do not show any clinical abnormalities***, and appear healthy. Due to the organism's ability to be distributed widely throughout the body via the vascular endothelial system, there is great interest as to whether common inflammatory diseases seen in cats may be related to *Bartonella*. Correlation has been shown in cases of anterior uveitis, conjunctivitis and blepharitis, and research is currently examining a possible role in feline cholangiohepatitis. There is evidence for the role of *Bartonella* species in disease of other animals (myocarditis, endocarditis and hepatitis have been reported in dogs).

Diagnostics: Blood culture is the most specific way of identifying *Bartonella*, however the organism can be difficult to isolate, and as bacteremia is known to be **cyclical**, false negatives are possible. **PCR** testing is available, however can fail to detect low level bacteremia, and also cannot differentiate living from dead organisms. **Antibody evaluation** through **Western blot or IFA** has decent negative predictive capability, with only approximately 5-10% of bacteremic cats displaying a false negative result.

Retesting at a later date in these cases may lead to more accurate results as antibody titers will have had time to rise. However, false negative results may also occur due to the genetic variability of naturally occurring *Bartonella* and the lack of experimental antigens to these variants.

Treatment: No therapeutic has been shown to completely eliminate this organism. Antibiotics including ***azithromycin, clindamycin, enrofloxacin, doxycycline*** **and** ***amoxi-clavulonate*** have been utilized in patients displaying clinical signs, and appear to decrease bacteremia. **Long term therapy** (up to 6 weeks in some studies) and follow-up are key to effective therapy and better understanding of this condition. Recurrent bacteremia is possible, and the length of time that antibodies may exist in the blood is currently unknown. It is important to treat only patients displaying clinical signs which may be attributable to infection, as this will help decrease the risk of *Bartonella* species developing antibiotic resistance.

So what do I do with this information? Exciting research examining the role of *Bartonella* in inflammatory conditions of cats is currently underway. At this time, evaluation as a screening tool is not accurate and it is not recommended to treat the non-clinical patient. Diagnostics can be considered in patients exhibiting inflammatory lesions or combined clinical signs and ocular disorders. Correlational evidence exists for the presence of this bacteria and clinical disease, and it should be considered on a differential list for patients exhibiting signs of inflammatory disease.

Zoonosis: ECVIM 2010 Breischweidt et. al presented significant information regarding zoonotic issues amongst cat owners and veterinary personnel in studies currently underway at NC State. Immune suppressed individuals are particularly at risk and resistance to Zithromycin seems to be an emerging issue. The prevalence of bartonellosis is significantly higher in cats than previously thought and seems to manifest visceral clinical signs more often in immune suppressed patients that carry a chronic active form.

The above information is a compilation of research presented at ACVIM 2003-2007, ECVIM 2010.

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