Proceeding of the LAVC
Latin American Veterinary Conference
Oct. 25-27, 2010 – Lima, Peru

Next LAVC Conference:

Oct. 24-26, 2011 – Lima, Peru

Reprinted in the IVIS website with the permission of the LAVC

http://www.ivis.org/
Giardiasis in Dogs and Cats: Diagnosis, Treatment, and Zoonotic Risk

Susan E. Little, DVM, PhD, Dipl. EVPC
Center for Veterinary Health Sciences
Oklahoma State University, Stillwater, OK, USA

Introduction

*Giardia* is a common, important parasite of dogs and cats throughout the world with prevalence rates in symptomatic pets (those with diarrhea and/or vomiting) exceeding 15% in some studies (Carlin et al., 2006). *Giardia* infections may be more commonly seen in dogs from certain areas, and surveys show that as many as 6-11% of pet dogs, including those that are clinically normal, may be found shedding cysts upon single examination by centrifugal flotation. Infection rates are equally high in cats although fewer surveys have been conducted. Some surveys of confined dogs, particularly dogs housed together in kennels long-term, place the prevalence rates at greater than 50%. There is also an age-related pattern to finding *Giardia* cysts in feces. For example, more than 12% of dogs less than 6 months of age may be found actively shedding cysts at the time of examination. However, by 3 years of age, the prevalence drops to 1% or less (Little et al., 2009). Although any age dog in any region is at risk for infection with *Giardia*, control programs for this parasite should take into consideration the marked regional and age-related distribution of this parasite.

Diagnosis of Giardiasis

In dogs or cats with clinical disease (e.g. diarrhea), both centrifugal fecal flotation using zinc sulfate solution (S.G. 1.18) and fecal ELISA for cyst antigen should be performed. In addition, a direct saline smear of feces should be examined for motile trophozoites. Identification of either cysts or trophozoites on fecal examination or a positive ELISA result is an indication for treatment; performing multiple fecal examinations on successive days increases the likelihood of detecting cysts. Examination of a duodenal aspirate may also reveal trophozoites, but most cases of giardiasis should be diagnosed prior to endoscopy. Because routine wellness examinations also include fecal centrifugation, cysts may be identified in some animals without clinical disease. In these cases treatment is at the discretion of the veterinarian. The use of fecal ELISA assays to screen clinically normal dogs and cats is not recommended (CAPC Guidelines, 2010).

Clinical Disease and Treatment

Although many canine infections with *Giardia* sp. appear asymptomatic, this parasite is widely recognized as capable of inducing moderate to severe diarrhea in dogs. Infection is acquired by ingestion of cysts from a contaminated environment; fecal-contaminated water often serves as a source of the cysts. Trophozoites develop and replicate in the proximal small intestine where they attach to enterocytes, resulting in malabsorption, maldigestion, hypermotility, and diarrhea that is often mucoid to fatty in nature. A 3-day course of either fenbendazole or febantel at the labeled doses have been shown to be effective at eliminating cyst shedding in the majority of treated dogs. Metronidazole is less efficacious than the benzimidazoles at resolving infections in dogs, and treatment with metronidazole may, on occasion, result in toxicity reactions in some pets (CAPC Guidelines, 2010).

Zoonotic implications of *Giardia* infections in pets

Both pets and people develop disease from *Giardia*, and *Giardia* infections in dogs must be handled as though they present a zoonotic threat. Although most infections in people are shown to be *Giardia* strains of human origin, these same strains have occasionally been found infecting dogs or cats, and thus the risk of zoonotic infection cannot be eliminated (Ballweber et
al., 2010). Nonetheless, most cases of giardiasis in people can be traced to a human source, and the role of infections in pets in creating a risk of human infection, if any, is not fully understood (CAPC Guidelines, 2010). This lack of robust support for true zoonotic Giardia infections is somewhat surprising, but also reassuring when infections are identified in pets, particularly when those infections are difficult to eliminate.

Preventing infection with Giardia in pets and people
Preventing giardiasis relies on providing safe municipal water sources for pets and people and avoiding contact with potentially contaminated natural bodies of water. Identifying the source of infection is usually not possible. However, when infections occur, careful attention to hygiene, including stringent hand washing practices, can limit the spread of infection. Vaccines are available to prevent clinical disease and limit the duration of cyst shedding in both dogs and cats. However, at present there is insufficient evidence to support the routine use of vaccines for prevention of or therapy for giardiasis (CAPC Guidelines, 2010).

SELECTED REFERENCES