

VETERINARY VOICE: Tips of the Trade

Internal Medicine- Giardia: Part 1

What is Giardia?	<i>Giardia duodenalis</i> (synonyms <i>G. intestinalis</i> and <i>G. lamblia</i>) is a noninvasive flagellated intestinal protozoan parasite that affects many mammalian species, including cats, dogs, and humans. <i>Giardia</i> exists in two forms, the motile trophozoite and the dormant cyst.
What species are affected?	
How is it transmitted?	Transmission of the parasite occurs after the host ingests <i>Giardia</i> cysts, or less commonly trophozoites, via direct contact with other animals or fecal-contaminated water or food sources. Clinical disease occurs 5 to 16 days after cyst ingestion.
Clinical signs of giardiasis?	The predominant clinical sign reported in <i>Giardia</i> spp. infections is acute <u>small bowel diarrhea</u> – soft, pale, and malodorous. Less frequently, chronic small or large bowel diarrhea can also be seen. The severity of disease associated with <i>Giardia</i> spp. infection is influenced by competition between the host and parasite for nutrients, concurrent gastrointestinal illnesses or parasitism, and parasite genotypic variations.
Diagnostic testing?	<ol style="list-style-type: none">1. Trophozoite identification in fresh fecal smears has a reported poor sensitivity. Because giardial cysts are intermittently shed in the feces, current recommendations for their detection are the collection of at least three separate fecal samples over 3 to 5 days that are analyzed using zinc sulfate centrifugal-flotation. The reported sensitivity of this latter protocol is approximately 95%.2. These limitations can be minimized with the use of an IFA, which has been shown to have improved sensitivity and specificity over light microscopy flotation/concentration techniques. Cost and limited availability of the IFA testing are some disadvantages to the IFA.3. SNAP® <i>Giardia</i> Test Kit (IDEXX Laboratories, Inc., Westbrook Maine) is available for in-house diagnosis in dogs and cats and has been proven to have high sensitivity and specificity but can remain positive for weeks to months after treatment and therefore is not recommended to monitor for successful treatment.4. The use of PCR for the diagnosis of giardiasis is now commercially available. Traditionally, DNA extracted from fecal material has been difficult to amplify and success rates vary. There are a variety of reasons for this including insufficient quantity of DNA, insufficient quality of DNA, the presence of non-specific DNA, and/or the presence of inhibitors in the feces that interfere with amplification. Peer reviewed studies to evaluate the PCR tests are not available.5. A recent study reported comparative sensitivity rates of IFA, ELISA, and PCR as 5, 60 and 80%, respectively.
Questions?	The Veterinary Specialty Center of Tucson has board-certified internists available for questions and consultations on internal medicine conditions during the weekdays. A member of the internal medicine team is on-call 24/7 to provide consultations to VSCT emergency doctors and to perform emergency procedures (endoscopy, ultrasound) for patients seen by the VSCT emergency service. Board-certified internists have four additional years of training and are certified by the American College of Veterinary Internal Medicine (internal medicine) to assure competency in advanced veterinary internal medicine procedures and cases.
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