Giardia in dogs

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• How does a dog get *Giardia*?
• Why is it in so many kennels?
• Why is it so hard to get rid of?
• What can you do in a large kennel (including shelter kennels)?
• **Giardia** spp.

  – Ubiquitous parasites of humans, mammals, birds, and amphibians

  – *Giardia* spp. found in dogs & cats
    • The predominant intestinal parasite of dogs & cats worldwide
    • Found in wild dogs and canids, too, one reason it is hard to get rid of

  – *G. lamblia* (syn., *G. duodenalis*, *G. intestinalis*) in humans, other primates, swine, cattle, other mammals

• **Disease**

  – giardiasis
How do dogs get Giardia?

• Ingestion of infective forms (cysts) from food, water, licking and eating feces

• Reproductive forms (trophozoites) live in small intestine, interfere with digestion, cause diarrhea

• Cysts enter environment in feces, cycle starts over
- Cysts

- Resistant to environmental insults
  - Resistant to chlorine in water systems
  - Takes weeks to degrade in environment
  - One factor ensuring *Giardia* will be found in many kennels, shelters, outdoors, etc.

- Adult carrier dogs may have low-grade infections with few cysts in feces and show no clinical signs
  - Another factor that enhances its transmission to kennels and continued presence
Giardia cysts (40 x)
• Clinical Signs

– Incubation period for acute disease 1 – 2 weeks
  • In dogs, diarrhea may begin as early as 5 days postinfection
– Clinical signs may be absent or range up to severe enteritis
– Diarrhea is the classic sign and may be acute or chronic
  • Often malodorous, gray, greasy, voluminous
  • Fats and carbohydrates are not absorbed
    – Spotty diarrheic stools
  • Increased mucus
  • **Not** hemorrhagic
– Flatulence
• Diagnosis of Giardiasis

- Trophozoites in diarrhea
  • direct exam
- Cysts in formed or semisolid feces
  • Intermittent shedding of cysts is common
- Fecal exams every other day (at least 3 exams) before one can assume the animal is negative
- $\text{ZnSO}_4$ flotation (former “Gold Standard”)
- Sugar flotation increases osmotic effects, but cysts are visible for a few hours
• Diagnosis of Giardiasis

– IDEXX Snap® Test (probably current Gold Std.)

– Combination of zinc sulfate centrifugation and IDEXX Snap® Test are ideal in the clinic
Treatment

- Dogs (Companion Animal Parasite Council)
  - Fenbendazole
    - 50 mg/kg
    - Oral administration
    - Every 24 hours
    - 5 days duration
    - Many anecdotal reports of lack-of-efficacy
  - Metronidazole
    - 25 mg/kg
    - Oral administration
    - Every 12 hours
    - 5 – 7 days duration
    - Efficacies as low as 50%
• Treatment

– The previous treatment recommendations come from the Companion Animal Parasite Council (CAPC) website. It is a very good website for information on *Giardia* infections in dogs and cats in this instance and has information about and recommendations for many other small animal parasites.

– Treatment can also be carried out for 10 days

– [https://www.capcvet.org/guidelines/giardia/](https://www.capcvet.org/guidelines/giardia/)
• **Treatment**
  
  – Dogs (from a Swiss research group)

  • **Ronidazole**
  • 30 – 50 mg/kg
  • Oral administration
  • bid
  • 7 days duration
  • A few anecdotal reports of lack-of-efficacy

  – The treatment information for ronidazole is found in the following publication:

• Treatment

– I have communicated with at least 14 practitioners in the last year+ who are dealing with persistent cases of *Giardia*, usually in dogs.

  • Metronidazole and fenbendazole did not work, even in combination

– I suggested they try the ronidazole protocol along with stringent hygiene practices

– Only one has informed me that the ronidazole did not work

– Resistance to drugs is one factor that makes *Giardia* infections so persistent
• Control

– Stringent hygiene and sanitation are critical

– Treat all dogs in contact with infected animal(s)

– Remove feces and prevent fecal contamination of food & water
  • Cysts are not killed by chlorine in water supplies

– Bathe thoroughly to prevent reinfection
  • Bathe during treatment and on last day of treatment

– Steam clean facilities, if possible
• Control

– Use veterinary-specific disinfection agents

– Virtually impossible to decontaminate the outside environment

– [Propane weed] burners can kill all manner of pathogens.

– Failure to follow steps ensures [Giardia] will stick around

– More detailed information in hand-out for large-kennel control study done at Virginia Tech College of Vet. Med.
• Public Health

  – Zoonotic?

  – Canine infections seem to be canine strain

  – Human strain also found in dogs, cross-transmission back to humans?

  – Should we handle all *Giardia* infections as if they are zoonotic?