

# *Giardia* in dogs

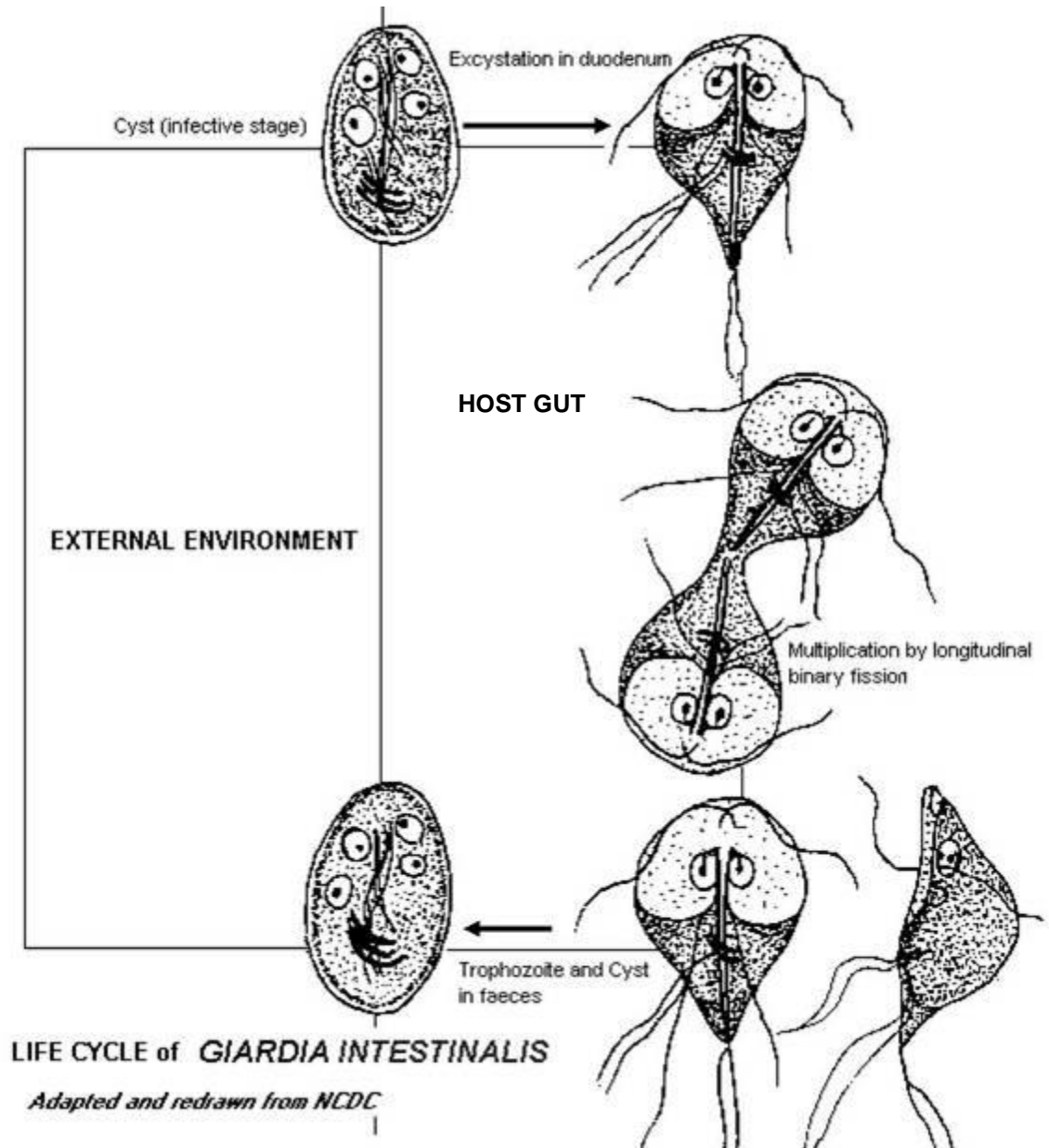
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- How does a dog get *Giardia*?
- Why is it in so many kennels?
- Why is it so hard to get rid of?
- What can you do in a large kennel (including shelter kennels)?

- ***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
    - Steatorrheic 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
- ZnSO<sub>4</sub> 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/>

# • 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:
- Fiechter, R., P. Deplazes, and Manuela Schnyder. 2012. Control of *Giardia* infections with ronidazole and intensive hygiene management in a dog kennel. *Veterinary Parasitology*. 187:93 – 98.

# • 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?