Small Animal Intestinal Parasites

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Parasite infections are commonly encountered in veterinary medicine and are often a source of zoonotic disease. Zoonosis is transmission of a disease from an animal to a human. This PowerPage covers the most commonly encountered parasites in small animal medicine and discusses treatments for these parasites. It includes mostly small intestinal parasites but also covers Trematodes, which are more common in large animals.

Nematodes

Diagnosed via **fecal flotation with zinc centrifugation** (gold standard)

Roundworms

- Most common roundworm in dogs and cats is ***Toxocara canis***
- Causes the **zoonotic** disease **ocular larva migrans**
- Treated with piperazine, pyrantel, or fenbendazole
- Fecal-oral, **transplacental** infection most common
- Live in the **small intestine**

Hookworms

- Most common species are ***Ancylostoma caninum*** and ***Uncinaria stenocephala***
- Causes the **zoonotic** disease **cutaneous larva migrans**, which occurs via skin penetration (often seen in children who have been barefoot in larval-infected dirt); in **percutaneous infection**, the larvae migrate through the skin to the lung, where they molt and are swallowed and passed into the small intestine
- Treated with fenbendazole, pyrantel
- Can cause hemorrhagic diarrhea and **severe anemia** (especially in young puppies)
- Fecal-oral, **transmammary** (common in puppies), percutaneous infections

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Whipworms

- ***Trichuris vulpis***
- Fecal-oral transmission
- Severe infection may lead to **hyperkalemia and hyponatremia** (pseudo-Addison's)
- **Large intestinal** parasite
- **Eggs have bipolar plugs** on the ends
- Treated with fenbendazole, may be prevented with milbemycin (Interceptor)

Cestodes

Tapeworms

- ***Dipylidium caninum*** is the most common tapeworm in dogs and cats and requires a flea as the intermediate host; the flea is usually inadvertently swallowed during grooming
- ***Echinococcus granulosus*** and ***Taenia*** spp. are transmitted by ingestion of infective hydatid cysts during predation of rabbits, rodents, birds, etc.
- Tapeworms are **flat and segmented**; the eggs are contained within the segments; the segments are referred to as **proglottids**
- The proglottid segments are released from the end of the worm and shed in the feces. They **resemble a grain of rice** and may be seen in the feces or around the anus of the pet. These are usually diagnosed via seeing the segments grossly.
    - Eggs are not always seen on a fecal float unless a proglottid breaks open prior to being passed in the feces and eggs are released
- **Praziquantel is the treatment of choice** (Drontal and Profender both contain this medication)

Trematodes

Flukes

- ***Fasciola hepatica*** is the most well-known fluke in veterinary medicine and is known as the common liver fluke; the adults can be found in the hepatic bile ducts
- Seen most commonly in cattle or sheep that have been grazing in endemic areas
- Flukes **require a snail as an intermediate host**, and thus the parasite is most common in areas of high rainfall or moist environments
- Treated most commonly with **albendazole**

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Giardia

- Life cycle of **flagellated protozoan (trophozoites)** and infective resistant **cysts**
- Fecal-oral transmission, often through **contaminated water** sources
- Often causes a **watery diarrhea**
- **Potentially zoonotic** (controversial - most species carried by dogs and cats are not infectious to people, but the potential is there and should be treated as zoonotic)
- Treated most often with **fenbendazole (Panacur)** or **metronidazole (Flagyl)**
- Cysts may be seen on a fecal flotation, but **Giardia ELISA** is the most sensitive test
- The **trophozoites** may be seen on a **direct smear** of a fresh fecal sample

Coccidia

- **Single celled** intestinal microscopic parasites
- ***Isospora*** is the most common coccidian in dogs and cats
- ***Eimeria*** is the coccidian seen most commonly in poultry/birds, rabbits
- Species-specific (Isospora is not infective to humans; Eimeria is not infective to dogs and cats, etc.)
- Treated with **sulfadimethoxine (Albon)**
- ***Eimeria stiedai*** - causes **hepatic coccidiosis in lagomorphs** (rabbits)
- Seen on a fecal float or sometimes a direct smear

References

- Foreyt, W. Veterinary Parasitology Reference Manual. Fourth Edition. 1997. p. 82-83.
- Urquhart, G.M., Armour, J. Duncan, J.L., Dunn, A.M., Jennings, F.W. Veterinary Parasitology. Second edition. Blackwell Science. 1996. p. 69-71, 53, 103, 129.

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