

Prevalence of Feline Coccidia in Khorasan Province of Iran

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Summary

Fecal samples from 82 stray cats from Khorasan province of Iran were examined for coccidia by the centrifugal sucrose flotation procedure. Feline coccidia were found in 33 stray cats (40.2%). The prevalence of feline coccidia based on fecal flotation were *Isospora felis* 22(26.8%), *Isospora rivolta* 6(7.3%), *Sarcocystis spp* 4(4.87%) and *Toxoplasma gondii* 1(1.2%). The presence of *T. gondii* were confirmed by inoculation to mice.

Key words: Prevalence, feline coccidia, Iran.

Introduction

There are *Isospora*, *Hamondia*, *Besnoitia*, *Sarcocystis*, *Toxoplasma* and *Cryptosporidia* in genera coccidia of cats (Lappin *et al.* 1990). In Iran, all reports have been published on the asexual cycle of feline coccidia in intermediate hosts (Cheema and Toofanian 1979, Ghorbani *et al.* 1978, Oryan *et al.* 1996). There is no information about these protozoa in cats in the country. The present paper is a report on the genera coccidia found in feces of stray cats.

Materials & Methods

Eighty-two stray cats were trapped in different regions of Khorasan province during period of August 1996 to November 1997. At necropsy, fecal sample were collected and stored at 4°C until fecal examination. Five to ten grams of feces was mixed with water to a liquid consistency and the mixture was strained through gauze. Two parts of Sheater's sugar solution (500g sugar, 300 ml water and 6.5g melted phenol crystal) was added to one part of fecal suspension and centrifuged in a capped centrifuge tube. Following centrifugation at 1000× for 10 min, 1 to 2 drops from the meniscus were removed by dropper, placed on a microscope slide, covered with a coverslide

and examined at $\times 100$ magnification (Lappine *et al.* 1990). Coccidal oocysts were easily identified but, *T. gondii* oocysts were morphometrically indistinguishable from oocysts of *Hammondia* and *Besnoitia*. For definitive diagnosis, cleaned, sporulated oocysts were inoculated intraperitoneally to mice by the method of Dubey (1988).

Results and Discussion

The results are present in Table 1. Oocysts of feline coccidia were found in fecal samples from 33 stray cats (40.2%). The species arranged in descending order of their prevalence are as follows: *Isospora felis* 22 (26.8%), *Isospora rivolta* 6(7.3%), *Sarcocystis* spp4 (4.6%) and *Toxoplasma gondii* 1 (1.2%).

This study was made to ascertain the prevalence of genera of coccidia in stray cats in Iran. The present study showed that stray cats were frequently (40.2%) infected with coccidia. As there was not similar surveys done on the prevalence of feline coccidia in Iran our results were not directly comparable. However, there was an agreement between the results of this survey and the previous report of Anaya *et al.* (1996) which showed a prevalence of 40.1% .

Coccidal oocysts of *I. felis* are large and easily identified in fecal flotation. The smaller oocysts of *I. rivolta* are almost identical structurally and distinguishable. In this study, *I. felis* were greater in frequency (26.8%) than *I. rivolta* (7.3%). The other surveys have shown that *I. felis* were more prevalent than *I. revilta* (Nichol *et al.* 1981, Anaya *et al.* 1997, Ng'Ang'A *et al.* 19984). The prevalence of *Sarcocystis* sporocysts 4.8% in this study is compatible with existing report (Dubey *et al.* 1989). The fact that a cat shed a few sporocysts in feces (Dubey *et al.* 1989) may indicate the low prevalence of *sarcocytis* sporocysts in fecal samples of stray cats. The low prevalence of *Toxoplasma gondii* (1.8%) observed in this study was anticipated. Because, several surveys have shown that the proportion of cats excreting oocysts al any one moment is not high, being usually not more than 2% in most countries (Dubey and Beattie 1988).

Table 1: Prevalence of coccidia in 82 cats examined.

Species	No. of Cats infected(%)
<i>Isospora felis</i>	22(26.8)
<i>Isospora rivolta</i>	6(7.3)
<i>Sarcocystis</i> spp	4(4.8)
<i>Toxoplasma gondii</i>	1(1.2)

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Reference

- Anaya MG, Cruz MI, Marin HJ Lecumberri LJ. (1997). Frequency of genera and species of Coccidia in cat feces in federal district of Mexico. *Veterinario Mexico*. 28:63-67.
- Basergani TT, Gharagoslo MJ Ebrahimi AM. (1987). A survey of Besnoitiosis in goats in kerman province of Iran. *Journal of veterinary faculty, University of Tehran* (In Persian, with English summary). 30:1-14.
- Cheema AH, Toofanian F. (1979). Besnoitiosis in wild and domestic goat in Iran. *Corneal Veterinary*. 89:159-168.
- Dubey JP, Beattie CP. (1988). *Toxoplasmosis of animal and man*. C.R.C Press, Inc. Florida. pp:220.
- Dubey JP, Spear CA, R. (1989). *Sarcocystosis of animal and man* C.R.C Press, Florida. pp:215
- Ghorbani M, Hafizi A, Shegerfcar MT, Rezaian M, Nadim A, Anwar A, Afshar A. (1983). Animal toxoplasmosis in Iran. *Journal of Medicine and Hygiene*. 86:73-76.
- Lappine MR, Clapin, JP, Prestwood AK. (1990). Laboratory diagnosis of protozoal infection. In: Green C.E (Editor) *Infection disease of the dog and cat*. W.B. Saunders Company, London. pp:751-618.
- Nichol SS, Ball SJ, Snower KR. (1981). Prevalence of intestinal parasites in domestic cats from London area. *Veterinary Record*. 109:252.
- Ng'Ang'A CJ, Munyua WK, Kanyari PW. (1994). Recovery and identification of Besnoitia and other coccidia from cat feces around Kabete in Kenya. *Bulletin of animal health and production in Africa*. 24:187-191.
- Oryan A, Moghaddam N, Gaur SNS. (1996). The distribution pattern of sarcocystis in Fars province of Iran. *Veterinary Research Communications*. 20:243-253.
- Slousby, E.J.L. (1982). *Helminths, Arthropods and protozoa of domesticated animals*. Baillier, Tindall, London. pp:809