

## Prevalence of Feline Coccidia in Khorasan Province of Iran

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### ABSTRACT

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 *Isoospora felis* 22 (26.8%), *Isoospora rivolta* 6 (7.3%), *Sarcocystis* spp. 4 (4.9%) and *Toxoplasma gondii* 1 (1.2%). The presence of *T. gondii* was confirmed by inoculation to mice.

### INTRODUCTION

There are *Isoospora*, *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 this country. The present paper is a report on the genera Coccidia found in feces of stray cats.

### MATERIALS AND METHODS

Eighty-two stray cats were trapped in different regions of Khorasan province during period of August 1996 through 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, 6.5g melted phenol crystal) was added to one part of fecal suspension and centrifuged in a capped centrifuge tube. Following centrifugation at 1,000 rpm for 10 min, 1 to 2 drops from the meniscus were removed by dropper, placed on

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a microscope slide, covered with a coverslide and examined under microscope at  $\times 100$  magnification (Lappine et al. 1990). Coccidial oocysts were easily identified, however, *Toxoplasma* oocysts were morphologically indistinguishable from oocysts of *Hammondia* and *Besnoitia*. For definitive diagnosis, cleaned and 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* spp. 4 (4.9%) and *Toxoplasma gondii* 1 (1.2%).

Table 1. Prevalence of coccidial protozoan parasites was examined in 82 cats in Iran.

Species	Number of cats infected	%
<i>Isospora felis</i>	22	26.8%
<i>Isospora rivolta</i>	6	7.3%
<i>Sarcocystis</i> spp.	4	4.9%
<i>Toxoplasma gondii</i>	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 infected with coccidian parasites (40.2%). Because there was not similar surveys 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 prevalence in Mexico which reported by Anaya et al. (1996).

Coccidial oocysts of *I. felis* are large and easily identified in fecal flotation. The smaller oocysts of *I. rivolta* are almost identical structurally and distinguishable from others. In this surveys have shown that *I. felis* was more prevalent than *I. revilta* (Nichol et al. 1981; Anaya et al. 1997; Ng'Ang'A et al. 1994). The prevalence (4.8%) of *Sarcocystis* sporocysts in this study is compatible with report by Dubey et al. (1989). The fact that a cat shed a few sporocysts in feces (Dubey et al. 1989) may the low prevalence of *Sarcocystis* 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

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the proportion of cats excreting oocysts at any one moment is not high, being usually not more than 2% in most countries (Dubey and Beattie 1988).

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