Short Communication

The Prevalence of Toxoplasmosis in Cats at Private Veterinary Hospital Multan, Pakistan

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Cats are the natural reservoir of *Toxoplasma gondii* and release the resistant eggs in the environment. During the present study 164 cats were examined for *Toxoplasma gondii* at veterinary Hospital in Multan, Pakistan. A flotation technique was used for the prevalence of eggs in fecal samples of cats. Out of 164 cats, 104 (63.41%) were infected with *Toxoplasma gondii*. The parasite was more prevalent (67.0%) in male hosts as compared to female hosts. The prevalence of *Toxoplasma gondii* was highest (70.14%) in age group of 1 month to 10 years, and the infection was 0% in the age group of 11 to 15 years. In conclusion the toms showed higher infection than cat and the infection rate was maximum in younger animals.

Keywords: *Toxoplasma gondii*, cat, age, sex prevalence

INTRODUCTION

*Toxoplasma gondii* is ubiquitous in nature infecting virtually all mammalian species, including humans. The infection is acquired mainly by eating food or water contaminated with eggs or tissue cysts of *T. gondii* (Dubey, 2004). The disease is of economic importance with regards to animal production and it has become a public health concern since it leads to abortions and neonatal complications in humans. The definitive host for *T. gondii* is cat and the intermediate hosts are mammals and birds. Cats play an important role in the spread of toxoplasmosis because they are the only hosts that can release the environmentally resistant eggs (Silva et al., 2001). Cats excrete around 20 million eggs between 3-18 days after infection (Dabritz et al., 2007). Cats may become infected with *T. gondii* by ingesting infected tissues or by ingesting food and water contaminated with oocysts or transplacentally. It is important to biologically and genetically characterize isolates of *T. gondii* from cats and this has been achieved only from cats from Brazil (Dubey et al., 2004; Pena et al., 2006).

Multan, situated in the centre of Pakistan, There were large number of stray/household cats roaming the streets and public areas with free feeding. Cats have lived in association with humans in this area and it is important in dissemination of *Toxoplasma* infection. The present study was designed to determine the overall prevalence of *Toxoplasma gondii* and the relationship between sex and age of host and *Toxoplasma gondii*.

MATERIALS AND METHODS

A total of 164 cats (household) of various ages and of both sexes that referred for toxoplasmosis to private veterinary
hospital Multan district of Punjab, province, Pakistan. Fecal sample of cats were collected and were subjected to a fecal flotation technique. Two grams of each animal were emulsified in sucrose solution filtered through gauze and centrifuged in a 10 ml tube at 400g for 15minutes. A drop of the float from the meniscus was examined microscopically at 400×magnification for the presence of T. gondii-like eggs (Cable, 1985). The χ2 test was used to determine cat seropositivity T. gondii association with sex and age of the host.

RESULTS

The prevalence of Toxoplasma gondii was studied in 164 cats from private veterinary hospital of Multan. The parameter studied were the overall prevalence of Toxoplasma gondii and relationship between age and sex of the host.

A total of 164 cat fecal samples were examined for Toxoplasma gondii. The overall prevalence of T. gondii recorded during the present study was 63.41%. Among these 88 (53.60%) were males and 102 (46.34.19%) females. The results indicate the toxoplasmosis prevalence was significantly higher 67.0 in males than 59.2% in females. Data for age-wise prevalence of toxoplasmosis is shown in (Table 1). There is highest (77.08%) prevalence among age group of 1month-5 years and zero percent in age group of 11-15 years (P<0.05).

DISCUSSION

Many reports from various parts of the world confirm to the prevalence of T. gondii in cats. The present study showed lower (73%) prevalence rate than reported by Garcia et al. (1999) in cats of Jaguapita and Dubey et al. (2004) reported 84.4% of seropositive cats in Santa Isabel do Ivaí. However, present findings are comparable with those of Serra et al., (2003) in Rio de Janeiro. Overall prevalence reported by them was 62% which is a much closest number to recorded results of the present experiment.

The present prevalence rate was found much higher in cats contrast with most of the literature on prevalence of T. gondii in various countries. The 51.6% in cats of Latvia (Deksne et al., 2013); 23.4% reported for stray cats from Sa’o Paulo county (Silva et al., 2002), 23.6% positive in stray cats, but 11.8% of indoor cats of Brazil (Lucas et al., 1999), 3.9% prevalence in cats of north-central Colorado (Hill et al., 2000).

Rate of infection of T. gondii as assessed by floatation technique during present plan of work differs from most of the figures provided in research of various scientists in different countries. It indicates that percent prevalence of T. gondii infection is not consistent throughout the world and varies from one geographical area to other (Salibay and Claveria, 2006). This variation may be due to differences in hygienic status of the societies, abundance of definitive as well as intermediate hosts, population figures and feeding habits of various countries of the world. The prevalence of T. gondii in cats varies depending on the age of cats, diets, method of serologic testing, and geographical location.

The obtained results revealed statistically significant difference in prevalence of T. gondii in both gender. The prevalence was higher in male cats as compared to female cats. The same results have been reported by Maruyama et al., (2002) for T. gondii in cats, males 6.0% and female cats 4.9%. Levels of immunoglobin, including IgG, IgM, IgA are greater in females than in males (Al-Qureshi,
The literature generally indicates that the females are more resistance to parasitic infections than males because of the gender associated differences in immunosuppressive properties (Morales-Montor et al., 2004).

Relationship between age and *T. gondii* was calculated. According to these results, the prevalence of *T. gondii* was highest (70.14%) in age groups of two months to five years and the prevalence was 15.79% in age group of six years to ten years and infection was 0% in age group of 11-15 years. The seroprevalence ranged from 15.1% to 25.8% among different age groups (Wu et al., 2011). Seroprevalence decreased with age (Deksne et al., 2013).

Langoni et al. (2001) investigated that the infection rate was higher in younger animals with 23.5% in animals between two months and three years old, 13.2% between three years and six years old, 10% between twelve and fifteen years old and 5% between fifteen eighteen years old. Gunita et al. (2013) reported the similar findings. It is general observation that the prevalence of parasitic infections is higher in young and old hosts, because the resistance to parasite is low in young and old hosts.

**REFERENCES**


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