

INFLUENCE OF AGE ON THE PREVALENCE OF PARASITIC INFECTIONS AMONG WILD MAMMALS IN THRISSUR ZOO, THRISSUR, KERALA

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Abstract

An investigation into the influence of age on the prevalence of parasitic infections among wild mammals in captivity in Thrissur Zoo was carried out by regular faecal examination over a period of one year. The prevalence of helminthic infection in herbivores and omnivores was higher in the animals aged one year and above, the rates being 71.62% and 65.9%, respectively, when compared to their younger counter parts of age one month to one year, the rates being only 51.8% and 64.7%, respectively. The animals of age below one month of both groups were found to be negative for helminthic infections.

Keywords

Age variation, helminth parasites, wild mammals, captivity, Thrissur Zoo

Introduction

Captivity alters the environment and life of wild animals, causes stress, reduces resistance and may increase the incidence of diseases, particularly parasitic diseases among them. Rao and Acharjyo (1984) suggested that helminth parasitic diseases posed one of the major problems in different species of zoo animals. Parasitic diseases in zoo animals of Assam State Zoo has been extensively studied by Chakraborty *et al.* (1994), Nasiruddullah and Chakraborty (2001) and Chakraborty and Goswami (2001). Information regarding age variation on the prevalence of parasitic infection are lacking in literature and the earlier surveys were mostly confined to prevalence rates of helminthic infection (Adkoli *et al.*, 1986; Modi *et al.*, 1997a; Niphadkar *et al.*, 1989; Varadharajan & Pythal, 1999). Modi *et al.* (1997b) reported that age has significant influence on

parasitic load only in the case of carnivores and not amongst herbivores.

The present study was aimed to analyse the influence of age on the prevalence of helminthic infection among wild mammals present in Thrissur Zoo, which has about 217 animals comprising nine species each of herbivores and omnivores and four species of carnivores.

Materials and Method

Age variance on the prevalence of parasitic infections among wild mammals was carried out by regular faecal examination over a period of one year from May 1998 to April 1999. Fresh faecal samples were separately collected from animals belonging to three age groups -- (a) below one month, (b) one month to one year, and, (c) above one year. The collected samples were properly labelled and processed using concentration technique and examined for ova of helminth parasites. The results of age variation on parasitic infection are presented in Table 1.

Results and Discussion

Out of 961 faecal samples examined, 654 samples (68.05%) were found positive for helminthic infection. Herbivores were infected with strongyle parasites such as *Strongyloides*, *Spirurid*, *Ascarid*, *Amphistome*, *Fasciola*, *Trichuris* and *Parascaris*, omnivores with Strongyle, *Strongyloides*, *Spirurid*, *Ascarid*, *Ancylostoma*, *Capillaria*, *Toxocara*, *Trichuris*, *Metagonimus*, *Artifechinostomum*, *Joyeuxiella* and *Hymenolepis* and carnivores with *Ancylostoma*, *Toxocara*, *Toxascaris*, *Strongyloides*, *Capillaria*, *Spirurid*, *Diphyllobothrium*, *Hymenolepis* and *Paragonimus*. This observation is comparable with the findings of Chakraborty *et al.* (1994), Varadharajan and Pythal (1999), Nasiruddullah and Chakraborty (2001), and, Chakraborty and Goswami (2001).

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Table 1. Age variation on the prevalence of parasitic infection among mammals

Age Group	Herbivores			Omnivores			Carnivores			Mammals as whole		
	TS	TP	P(%)	TS	TP	P(%)	TS	TP	P(%)	TS	TP	P(%)
< 1 month	8	-	0.00	2	-	0.00	*	-	-	10	-	0.00
1 month - 1 year	83	43	51.80	17	11	64.70	*	-	-	100	54	54.00
> 1 year	444	318	71.62	261	172	65.90	146	110	75.34	851	600	70.50
Total	535	316	67.47	280	183	65.32	146	110	75.34	961	654	68.05

* Age groups were not present

TS - Total number of samples examined; TP - total number found positive; P - prevalence

Among mammals as a whole, the animals of ages one year and above had comparatively higher prevalence (70.5%) as against only 54% in case of animals aged one month to one year.

Age influence on the prevalence of helminthic infections revealed that the animals aged one year and above in both herbivores and omnivores had higher prevalence of infection, (71.62% and 65.9% respectively) as compared to the animals aged one month to one year, the rates being only 51.80% and 64.70% respectively. This is in accordance with the findings of Modi *et al.* (1997b) who examined some animals in a zoo in Bihar and reported that the adult animals were found to have higher infections (47.89% in herbivores and 57.18% in carnivores) as compared to their younger counter parts (44.12% and 18.75% respectively). The prevalence of infection was comparatively lower in animals of less than one year which might be due to the fact that more care and attention are given to these animals for better livability and growth which indirectly help to prevent the invasion of infective stages of parasites.

The animals below one month of age were found to be negative for helminthic infections in both groups. This may be due to the fact that the numbers of samples from that particular group were very low when compared to those from adults. Moreover, special care is given to protect youngest animals against diseases.

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