DOES SEX INFLUENCE PREVALENCE OF PARASITIC INFECTION AMONG CAPTIVE WILD MAMMALS? AN OBSERVATION AT THE ZOOLOGICAL GARDEN, THIRUVANANTHAPURAM, KERALA

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Zoological gardens play a vital role in the preservation of wild animals for aeshetic, educational and conservation purposes. They also serve as a sole breeding foci for certain highly endangered species. Parasitic diseases constitute one of the major problems causing even mortality in wild animals in captivity (Rao & Acharjyo, 1984). Although there have been numerous studies on the prevalence of gastro interstinal parasitism in wild animals, there have been only a limited number of parasite surveys conducted for the influence of sex among them.

The present investigation was undertaken to find out the influence of sex on the prevalence of parasitic infection in different zoo mammals at the Thiruvananthapuram Zoological Garden.

One hundred and eight fresh faecal samples (52 from males and 56 from females) were collected from the wild mammals kept in individual enclosures and mixed species exhibits. The collected samples were immediately preserved in two per cent potassium dichromate and five per cent formaldehyde. Then the samples were processed with concentration methods of centrifugation-cum-sedimentaion technique and examined for parasitic infections. The results are presented in Table 1.

Of the 52 samples from males and 56 samples from females examined, 40 samples (76.92%) and 39 samples (69.64%) respectively were found positive for parasitic infections. The common parasites identified in herbivores were strongyle, amphistome, *Strongyloides* and *Fasciola*; in carnivores *Ancylostoma, Toxascaris, Diphyllobothrium* and *Paragonimus;* and in omnivores, strongyle, *Strongyloides* and *Hymenolepsis*. (Varadharajan & Pythal, 1999). Of the 33 males and 39 females examined among herbivoroes, 25 (75%) and 26 (66.66%) respectively were found positive for parasitic infection. Male animals of Spotted Deer, Sambar and Black Buck had higher prevalence rate than the females. But in Hog Deer the females had higher prevalence rate. Among omnivores 13 males and 11 females examined, 11 (84.61%) and eight (72.72%) were positive respectively. In the case of carnivores six males and six females examined, four (66.66%) and five (83.33%) were positive respectively. In Lion, females had higher prevalence of infection than males.

References

Rao, A.T. and L.N. Acharjyo (1984). Diagnosis and classification of common diseases of captive animals at Nandankanan Zoo in Orissa (India). *Indian J. Anim. Hlth.* Dec.: 147-152.

Varadharajan, A. and C. Pythal (1999). Parasites of wildlife - I. A preliminary investigation on the parasites of wild animals at the Zoological Garden, Thiruvananthapuram, Kerala, *Zoos' Print J.* 1-14 (3-12): 159-164.

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Table 1. Influence of sex on the prevalence of parasitic infection among zoo animals

Hosts	No. of animals at the Zoo*		No. of samples collected from			No. positive for parasitic infections		
	Male	Female	Male	Female	Total	Male	Female	Total
Herbivores								
1. Spotted Deer *Axis axis*	16	29	9	14	23	8(88.88)*	*10(71.43)	18(78.26)
2. Sambar *Cervus unicolor*	13	21	6	10	16	5(83.33)	7(70)	12(75.00)
3. Hog-Deer *Axis porcinus*	7	10	5	7	12	2(40)	3(42.85)	5(41.66)
4. Blackbuck *Antilope cerivcapra*	9	4	6	3	9	5(83.33)	2(66.66)	7(77.77)
5. Barking Deer *Muntiacus muntjak*	3	1	1	1	2	1(100)	1(100)	2(100)
6. Nilgai *Boselaphus tragocamelus*	3	2	2	1	3	-	-	-
7. Cape baffalo *Syncerus caffer*	1	1	1	1	2	1(100)	1(100)	2(100)
8. Mithun *Bos sondaicus*	2	2	1	1	2	1(100)	1(100)	2(100)
9. Hippo *Hippopotamus amphibius*	2	2	1	1	2	1(100)	1(100)	2(100)
Total			32	39	71	25(75.75)	26(66.66)	51(70.83)
Omnivores								
10. Wild Boar *Sus scrofa*	11	8	9	6	15	9(100)	9(100)	15(100)
11. Rhesus Macaque *Macaca mulata*	1	1	1	1	2	-	-	-
12. Bonnet Macaque *Macaca radiata*	4	5	1	2	3	-	-	-
13. Sloth Bear *Melursus ursinus*	1	1	1	1	2	1(100)	1(100)	2(100)
14. Toddy Cat *Paradoxurus hermaphroditus*	1	1	1	1	2	1(100)	1(100)	2(100)
Total			13	11	26	11(84.61)	8(72.72)	19(73.07)
Carnivores								
15. Jackal *Canis aureus*	4	2	2	1	3	2(100)	1(100)	3(100)
16. Tiger *Panthera tigris*	2	3	1	1	2	1(100)	1(100)	2(100)
17. Lion *Panthera leo*	4	11	2	3	5	-	2 (66.66)	2(40.00)
18. Leopard *Panthera pardus*	1	1	1	1	2	1(100)	1(100)	2(100)
Total			6	6	12	4(66.66)	5(83.33)	9(75.00)
Grand Total	85	105	51	56	107	40(76.92)	39(69.64)	79(73.14)

* Exclusing younger animals

** Figures in paranthesis indicates percentages.