

**SEROLOGICAL EVIDENCE OF LEPTOSPIRAL ANTIBODIES IN ELEPHANTS**

LARGE number of animal species including man is susceptible to leptospiral infection. Rodents, wild-life and sometimes large animals including dogs, swine and others have been incriminated as reservoirs of

It was interesting to observe that out of the fifteen serum samples screened against 14 serotypes, 2 samples showed the presence of leptospiral antibodies against the serotypes *L. valbuzzi* and *L. pyrogenes* and there was higher antibody titre (1:200) against serotype *L. pyrogenes* (Table I).

TABLE I

*Incidence of leptospiral antibodies among elephants*

Total No. of animals tested	No. of animals showing positive	Positive for serotypes and titre				
		1 : 100	1 : 200	1 : 400	1 : 800	1 : 1600
15	2 <i>L. valbuzzi</i>	+	-	-	-	-
	<i>L. pyrogenes</i>	+	+	-	-	-

leptospire. The complexity of epidemiology of leptospirosis has not been fully studied in this country and a knowledge of the incidence of this disease is fragmentary. Preliminary screening of different species of animals in Karnataka has demonstrated the evidence of leptospiral infection. As part of the epidemiological survey of leptospirosis infection the screening of elephants was taken up and the observations are presented.

The blood samples from the ear vein of fifteen adult elephants were collected and the serum separated. All the serum samples were tested for the presence of leptospiral antibodies by microscopic agglutination test using the live leptospira cultures (antigens)<sup>1</sup>. The following fourteen *Leptospira interrogans* serotypes were used as antigens for the test: *L. canicola*, *L. icterohaemorrhagiae*, *L. pomona*, *L. bataviae*, *L. valbuzzi*, *L. pyrogenes*, *L. poi*, *L. andaman*, *L. australis*, *L. tarassovi*, *L. wolffi*, *L. autumnalis*, *L. djasiman*, *L. patoc*. I. A four fold dilution was prepared of each serum sample (0.1 ml), using sterile phosphate buffered saline (pH 7.4) as diluent providing serum dilutions of 1 : 50 through 1 : 3200. To each 0.1 ml of the diluted serum in a clean well of a perspex plate, was added an equal quantity of 7-10 day old well grown live leptospiral culture (antigen in E.M.J.H. liquid medium) to provide a final dilution of 1 : 100 to 1 : 6400. The plate was shaken well and incubated at 30° C for 3 h, after which it was examined under dark field microscope for agglutination, lysis or both. When 75% or more of the cells were agglutinated or lysed, it was taken as complete and a sample showing a titre of 1 : 100 was considered as positive.

Infection with serotype pomona has been reported to be more frequent in cattle, sheep and goats and horses<sup>2</sup>. However, in the present study, antibodies against serotype pomona were not observed. Leptospiral infection has been recorded more frequently in animals and men coming in contact with infected water, sugarcane or rice fields<sup>3</sup>. Since elephants invariably wallow through water holes for drinking and invade the sugarcane fields in search of food, it is probable that the animals might have been infected from these sources. Although direct transmission through skin abrasions occur frequently, the primary source of transmission of leptospirosis is contaminated water by urine of infected animals. In the present study, antibodies against two leptospiral serotypes have been observed.

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