

**SEROPREVALENCE OF *TOXOPLASMA GONDII* INFECTION IN A NATURAL POPULATION OF TOQUE MACAQUES (*MACACA SINICA*) AT POLONNARUWA, SRI LANKA**

D.K. EKANAYAKE<sup>1</sup>, R.P.V.J. RAJAPAKSE\*<sup>1</sup>, J.P. DUBEY<sup>2</sup>, W.P.J. DITTUS<sup>3</sup>

<sup>1</sup>Department of Veterinary Pathobiology, Faculty of Veterinary Medicine and Animal Science University of Peradeniya, Peradeniya, and <sup>2</sup>USDA, ARS, ANRI, Animal Parasitic Diseases Lab, ARC-East, Bldg. 1001, Room 1, Beltsville, MD 20705-2350, <sup>3</sup>Institute of Fundamental Studies, Kandy, Sri Lanka and Department of Conservation Biology, National Zoological Park, Smithsonian Institution, Washington DC, USA.

*Toxoplasma gondii*, is an obligate intracellular coccidian parasite, which has been widely reported from humans and animals worldwide. It causes fatal disease among New World primates and asymptomatic disease in Old World monkeys similar to human infections. But, severe and fatal infection has been shown to occur among immunocompromised humans as well as nonhuman primates.

A total of 170 serum samples from a natural population of toque macaques (*Macaca sinica*) inhabiting the Polonnaruwa sanctuary were collected for this study. Among the eight groups sampled home ranges of four groups overlapped with human settlements. Sera were examined by using direct latex agglutination test in U bottom micro titer plates with two fold dilutions. The antibody titer was determined by serial dilutions of positive sera.

The overall prevalence of *T. gondii* infection among these macaques was 12% (21/170). Although no statistically significant sex and age differences were observed in *T. gondii* prevalence rates, males showed higher prevalence (13.9%) than females (10.7%) and the 3-6.5 year age grouped showed higher prevalence (22%) than other age groups. Macaques around human settlements showed a statistically significant prevalence rate (25%) when compared to the 2% prevalence among strictly forested macaques ( $P < 0.0001$ ). Antibody titers of positive sera ranged from 1:16 to 1:4096. The mean antibody titer of the population was 34. Antibody titer of both 1:16 and 1:32 were found in 43% samples while only 10% showed  $>1:256$  antibody titer. There was no significant titer difference observed between males and females and no correlation was observed between age and antibody titer.

The serological evidence of toxoplasmosis among this natural population indicates the endemicity of the infection in Polonnaruwa and extensive contamination of the natural habitats with *T. gondii* infection due to human encroachment. Further studies are necessary to isolate and characterize *T. gondii* to confirm this infection among these nonhuman primates.