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STUDIES ON *TOXOPLASMA GONDII* IN FELINE, CAPRINE, HUMAN AND ENVIRONMENT SAMPLES: A "ONE HEALTH" APPROACH

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Statement of the Problem: Toxoplasmosis is emerging as a major foodborne disease of man and animals across the world. A 'one-health' approach is essential to understand, prevent, and control toxoplasmosis, while the gaps in the epidemiological information targeting human, animal and environmental counterpart have been found in earlier studies. As a one health collaborative approach, the purpose of this study is to determine the prevalence of toxoplasmosis in felines, caprines, humans and environmental samples in Thrissur, Kerala.

Methodology & Theoretical Orientation: A total of 704 samples comprising of feline faeces, caprine serum, caprine milk, human serum, soil and water were collected from Thrissur, Kerala. The samples were subjected to detection of the *Toxoplasma* using different methods such as oocyst detection and molecular characterization using *B1* gene in feline samples, soil and water samples and seroprevalence using IgG ELISA in caprine and human samples. The different risk factors associated with *T. gondii* infection in caprines and humans were also analyzed using standardized questionnaire.

Findings: The *T. gondii* oocyst was detected in 4.47% of 313 feline faecal samples. On molecular detection by PCR, the *B1* gene of *Toxoplasma* sp. was detected in six out of 61 soil samples. None of the 61 water samples showed presence of the parasite. Overall seroprevalence of 41.30% was observed in 184 caprine sera and 52.46% was recorded in the 161 human serum samples. A higher seroprevalence was observed in caprines of >4 years of age and with grazing habit and in ewes with history of bad obstetrics. Practice of rearing of more than three cats and those humans involved in gardening and agricultural activities had higher prevalence of *T. gondii* antibodies. Seroprevalence of the parasite in older individuals and in women with history of gynaecological disease conditions and on non-vegetarian diet was higher.

Conclusion & Significance: The study indicates the wide spread presence of the parasite in the area. This necessitates the implementation of effective surveillance and monitoring system for the detection of food borne parasitic disease globally and one health approach is inextricably linked to the control of the disease.

Recent Publications

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2. Dubey J P and Jones J L (2008) *Toxoplasma gondii* infection in humans and animals in the United States. Int. J. Parasitol. 38(11):1257–78.
3. Dabritz H A, Miller M A, Atwill E R, Gardner I A, Leutenegger C M, et al. (2007) Detection of *Toxoplasma* gondii-like oocysts in cat feces and estimates of the environmental oocyst burden. J. Am. Vet. Med. Assoc. 231(11):1676–84.
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Biography

C Latha, Dean of College of Veterinary and Animal Sciences has 26 years of research experience and has completed 25 research projects funded by many funding agencies like ICAR. She has published 70 research articles in reputed national and international scientific journals, three books and has presented 150 papers in several national and international seminars and symposiums. She is holds key positions as the University Head of the Department of Veterinary Public Health, Chairman of Project Coordination Committee, Board of Studies and Faculty of Research Council of the university.

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